California Regional Water Quality Control Board
Santa Ana Region

UPDATE TO THE

November 5, 2004
AGENDA

The following items have been excluded from the agenda for the reasons indicated below:

Item No:

11 **Appeal of Staff's Denial of an Exemption from the Minimum Lot Size Requirement.** This item has been removed from the Agenda.

14 **Mandatory Penalties Complaint, Atlantic Richfield Company, Service Station at 5981 Warner Avenue, City of Huntington Beach.** The liability was paid and the discharger waived their right to a hearing. No Board action required.

15 **Mandatory Penalties Complaint, Hamid Farsai, Huntington Beach ARCO, 6002 Bolsa Avenue, Huntington Beach.** This item has been postponed until the December 17, 2004 Board Meeting.

16 **Mandatory Penalties Complaint, Bell Industries, 1831 Ritchey Street, Santa Ana.** This item has been postponed until the December 17, 2004 Board Meeting.

17 **Mandatory Penalties Complaint, Straub Distributing Company, Ltd., 11552 Monarch Street, Garden Grove.** The liability was paid and the discharger waived their right to a hearing. No Board action required.

18 **Mandatory Penalties Complaint, Conexant, 4311 Jamboree Boulevard, Newport Beach**. The liability was paid and the discharger waived their right to a hearing. No Board action required.

19 **Mandatory Penalties Complaint, Venus Laboratories, Inc., 12601 Monarch Street, Garden Grove.** This item has been postponed until the December 17, 2004 Board Meeting.

21 **Administrative Civil Liability Complaint, Raytheon Systems Company, Former Hughes Site at 651 Gilbert Street, Fullerton.** This item has been postponed until the December 17, 2004 Board Meeting.

23 **Petition by the West Valley Water District and the Fontana Water Company for Issuance of a Water Replacement Order to the County of San Bernardino**. This item has been postponed.

California Regional Water Quality Control Board
Santa Ana Region

November 5, 2004

ITEM: 23

SUBJECT: Petition by the West Valley Water District and the Fontana Water Company for Issuance of a Water Replacement Order to the County of San Bernardino

DISCUSSION:

On September 14, 2004, the West Valley Water District and the Fontana Water Company submitted a petition to the Regional Board for the issuance of a Water Replacement Order to the County of San Bernardino to address perchlorate contamination affecting groundwater basins in the Inland Empire. A copy of the petition is attached. The Board will conduct a hearing to receive all testimony and evidence related to this issue from the petitioners, San Bernardino County, and other interested parties. At the conclusion of the hearing, the record will be closed. No action will be taken by the Board at the hearing. At the December 17, 2004 Board meeting, Board staff will present the Board with a recommended course of action.

Additional information regarding the hearing is included in the Board's Notice of Hearing dated October 18, 2004 (attached).

California Regional Water Quality Control Board
Santa Ana Region

Terry Tamminen
Secretary for Environmental Protection

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Arnold Schwarzenegger
Governor

October 18, 2004

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NOTICE OF HEARING IN THE MATTER OF THE PETITION OF WEST VALLEY WATER DISTRICT AND FONTANA WATER COMPANY FOR ISSUANCE OF WATER REPLACEMENT ORDER TO THE COUNTY OF SAN BERNARDINO TO ADDRESS THE PERCHLORATE CONTAMINATION AFFECTING THE GROUNDWATER BASINS IN THE INLAND EMPIRE

THE HEARING:

A hearing is scheduled before the Regional Board on Friday, November 5, 2004, in the City of Perris, California, on the Petition filed by West Valley Water District and Fontana Water Company ("WVWD" and "FWC") for Issuance of Water Replacement Order to the County of San Bernardino to Address the Perchlorate Contamination Affecting the Groundwater Basins in the Inland Empire. The hearing will take place during the Board meeting that begins at 9:00 a.m.

This Notice provides the procedure for a hearing that is part of the process under which the Regional Board will consider the above-referenced petition. At the hearing, the Regional Board will receive all testimony and evidence from the parties relating to the issues stated below. At the conclusion of the hearing, the record will be closed. No action will be taken by the Board at the hearing. At the December 17, 2004, Board meeting, the Regional Board staff will present the Board with a recommended course of action to address the Petition. Absent good cause, no further testimony or evidence will be accepted at the subsequent Board meeting. However, the parties will be given ten minutes each at the December 17, 2004, meeting to comment on the Staff's recommendation.

At the hearing, the parties should address the questions of whether the technical data and whether the law support issuance of the requested Water Replacement Order. Additionally, the parties should address whether, if the technical data and the law support the issuance of the requested Order, there are other considerations that support or argue against issuance of the requested Order.

The order of proceeding at the hearing is: (1) West Valley Water District and Fontana Water Company; (2) The County of San Bernardino; (3) other interested persons. WVWD and FWC will be given 45 minutes to make their presentation. The County will be given 45 minutes to make its presentation. Unused time may be reserved with the permission of the Chair. Oral comments from other interested persons will be limited to five minutes each.

THE RECORD:

The record in this matter currently consists of the Petition itself and the Regional Board's record relating to the County's investigation of the discharge of perchlorate adjacent to the actively landfilled portion of the Mid-Valley Sanitary Landfill, including the Investigation Order issued to the County on September 26, 2002 and all reports submitted to the Regional Board by the County in response thereto; Cleanup and Abatement Order No. R8-2003-0013 issued to the County and all reports submitted to the Regional Board by the County in response thereto; and Order No. R8-2004-0072 issued to the County and all reports submitted to the Regional Board by the County in response thereto. The parties are assumed to possess or have access to copies of all these documents. In the event a party or interested person wishes to review or obtain copies of these records, please contact Debi Ney at (951) 782-3237. A party wishing to submit additional documents must meet the deadlines below.

DEADLINES:

Pursuant to Title 23 CCR, Section 648.4(b), please observe the following deadlines:

No later than October 28, 2004, 5:00 p.m.: WVWD and FWC and the County are to provide the Executive Officer for transmittal to the Board a list of witnesses who will testify at the hearing and a copy of any exhibits that will be introduced at the hearing. Each of the parties shall also provide the list of witnesses and a copy of all exhibits to the other party by the same deadline.

Failure to observe the above deadlines may result in the proposed testimony or exhibit not being admitted by the Board into evidence. All documents submitted for the hearing, including those contained in the agenda package, and those described above as "The Record" will be made part of the administrative record. The parties' submittals should be limited to a concise set of documents upon which each party intends to rely, including any written briefs and copies of key exhibits. Although prior submittal of written testimony is not required, all parties are urged to make use of that provision in light of the time allotted for each presentation. Pursuant to Title 23, CCR, Section 648.4(d), any witness providing written testimony in advance of the hearing must appear at the hearing to affirm the written testimony and to be subject to cross examination.

Any questions regarding this Notice should be directed to Kurt Berchtold, Assistant Executive Officer, at (951) 782-3286.

Sincerely,

Kurt V. Berchtold

For Gerard J. Thibeault, Executive Officer
Santa Ana Regional Water Quality Control Board

cc: Jorge A. Leon, SWRCB
Gene Tanaka, Best Best & Krieger
Susan Trager
Perchlorate Task Force Mailing List

San Bernardino County MVSL - Perchlorate

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FILE NO. 44266.001

September 14, 2004

VIA HAND DELIVERY

Gerard J. Thibeault
California Regional Water Quality Control Board,
Santa Ana Region
3737 Main Street, Suite 500
Riverside, California 92501-3348

Re: *West Valley Water District's and Fontana Water Company's Petition for Issuance of Water Replacement Order to the County of San Bernardino to Address the Perchlorate Contamination Affecting the Groundwater Basins in the Inland Empire*

Dear Mr. Thibeault:

This firm represents the West Valley Water District and the Fontana Water Company (the "Water Purveyors"). The purpose of this letter is to petition the California Regional Water Quality Control Board, Santa Ana Region ("Regional Board"), to immediately issue a Water Replacement Order ("WRO") to a responsible party with regard to the perchlorate contamination affecting the groundwater basins in the Inland Empire.

Specifically, the Water Purveyors request that a WRO be issued to the County of San Bernardino ("County"), a party to whom the Regional Board has already issued a Cleanup and Abatement Order ("CAO") based on the overwhelming evidence that it discharged perchlorate to the waters of the State. Given the critical water supply problems which currently exist due to (i) the magnitude of the perchlorate groundwater contamination, (ii) the lack of sufficient infrastructure to provide readily accessible alternate water supplies, (iii) the size of the affected population and the burden imposed by rate increases, and (iv) the effects of the drought, Regional Board Staff should immediately issue the WRO or, if they do not do so, place this petition for the issuance of the WRO on the Regional Board's agenda for its next meeting.

The Water Purveyors recognize that the Regional Board Staff is currently considering amending the existing cleanup and abatement order to the County (Order No. R8-2003-0013) to add a water replacement contingency plan for Rialto Well No. 3. The Water Purveyors are encouraged by the Regional Board's efforts in this regard. However, even if the Board grants Staff's request, this amended order will not be sufficient. Most significantly, the

proposed amendment only addresses the contingencies of potential future contamination at Rialto Well No. 3. There are a total of at least 20 wells in the area **already impacted by the perchlorate contamination** which need to be addressed by way of a WRO. It is critical that WROs be issued that will address the contamination already affecting impacted water production wells. Additionally, *even under the current proposed order, other wells in the area which, like Rialto Well No. 3, are directly threatened by the migrating perchlorate plume even though they do not yet exceed the action level, have not been addressed as part of the contingency plan sought by Staff in the proposed amendment*, including, but not limited to: Fontana Water Company Well Nos. F 49-A, F 10-B, F 10-C and WVWD Well No. 33.

I. INTRODUCTION/BACKGROUND

The groundwater basins in and around the cities of Fontana, Rialto and Colton, California, including, but not limited to, the Chino, Rialto, Colton, and "No-Man's Land" Basins (the "Basins") are some of California's most important sources of water. The beneficial uses of the Basins include municipal and domestic supply, agricultural supply, industrial service supply, and industrial process supply. Unfortunately, parts of the Basins are now seriously polluted with hazardous substances, including perchlorate.

The combination of the perchlorate pollution and what has been described as the worst drought in 500 years has resulted in a serious water shortage for the water purveyors which rely on the Basins as a substantial part of their water supply. (See article entitled "Western Drought Worst in 500 Years," dated June 18, 2004, from CNN.com, and USGS Fact Sheet, June 2004, attached as Exhibit 1). Indeed, the Water Purveyors alone have been forced to shut down a dozen water supply wells due to the perchlorate contamination, thus further depleting available resources.[1] These current conditions have created a situation which requires immediate, decisive and legislatively authorized action. Specifically, the Regional Board must begin issuing water replacement orders ("WROs") to address these critical water supply problems. This is precisely why such authority has been granted under the California Water Code.[2]

Pursuant to the express legislative authority discussed below, WROs are being issued in other Regions to battle perchlorate contamination where the conditions are less

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[1] Moreover, the Cities of Rialto and Colton have shut down or limited use of at least eight wells because of the perchlorate contamination and in July, 2003, the Rialto City Council declared a water shortage emergency under California Water Code sections 350, et. seq. (which continues today), because of the effects of the groundwater contamination and the local drought.

[2] California Water Code §§ 13304 et seq.

compelling. For instance, on July 6, 2004, the California Regional Water Quality Control Board, Central Coast Region, issued a WRO against Olin Corporation. That Order cogently finds, among other things, that "alternative water would not be required if the perchlorate had not been discharged," and that "perchlorate, at any level, is not considered a background constituent of local groundwater... the natural background perchlorate concentration in the [affected] groundwater sub-basin is zero." (A copy of the Order is attached hereto as Exhibit 2 for your reference and guidance.) The facts that justify the WRO against Olin Corporation parallel those here in this Region as to the County. In fact, as set forth below, the facts here are undeniable.

Moreover, WROs have been successfully issued in the past, and the results have proven that WROs are a very effective and economical means of enforcement. Specifically, the Los Angeles Regional Water Quality Control Board and USEPA previously issued a joint unilateral administrative order for water replacement against various oil companies in connection with the MTBE contamination of the groundwater in Santa Monica. As a result, the responsible oil companies, and not ratepayers or the taxpayers, have been paying for the cost of the replacement water over the past several years while a permanent remedy is being developed. This enforcement method provides a compelling economic motivation for polluters to find a solution to the contamination rather than avoiding their cleanup responsibilities through denial of responsibility and delay in the administrative process, as many have tried to do in this Region (somewhat successfully) over the last two or more years.

Most critical is the notion that the regional boards in the various regions should be enforcing the California Water Code uniformly, and based on the same set of criteria. To do otherwise gives rise to inequity and frustrated efforts to avoid environmental injustice. Accordingly, the Santa Ana Regional Board should begin issuing WROs to clearly identified responsible parties ("RPs"). As more fully set forth below, significant evidence has now been compiled against the County. Indeed, the Regional Board has already issued a Cleanup and Abatement Order to the County based on the overwhelming uncontroverted evidence that it contributed to the perchlorate groundwater pollution in the Region.[3] Indeed, it is not a question of whether it has contaminated the precious dwindling groundwater resources, but rather how much. Nevertheless, no cleanup has occurred, and additional monitoring wells in the region continue to detect concentrations of perchlorate. (See, e.g., recent data from monitoring wells No. N-13 and N-14, which are to the southeast of the County-run Mid-Valley Sanitary Landfill,

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[3] A WRO may be incorporated into a CAO. California Water Code § 13304(a); see, e.g., CAO to Olin Corporation, attached hereto as Exhibit 2. In other words, the Regional Board is not required to wait for the implementation of a CAO with regard to a particular party prior to issuing a WRO to that party.

attached hereto as Exhibit 3.) Thus, it is imperative that the Regional Board take action now before the spreading contamination causes more water supply wells to shut down, thereby causing the current water shortage to become a water supply crisis.[4]

To date, although there has been progress in identifying the possible sources of the groundwater contamination, there has not been enough action directed toward replacing the lost water resources and ensuring that the public does not bear the burden of rectifying this critical situation. Further, there are insufficient resources aimed at preventing additional drinking water supply wells from becoming contaminated. The investigation is over two years old and much more needs to be done to alleviate the groundwater contamination. The Regional Board has battled recalcitrant RPs with little success. Moreover, the Regional Board has issued a cleanup and abatement order in 2003, and another one earlier this year, yet no cleanup has actually occurred. It could be several more years before the plumes are adequately characterized, and several more years after that before an effective clean-up remedy can be developed and implemented. Accordingly, the Regional Board must now follow the lead of other regional boards by effectively utilizing and implementing the recently strengthened/reaffirmed water code sections and issue a WRO as to the already impacted wells and to the County which is a polluter responsible for the groundwater contamination.

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[4] It is important to note that there is no requirement in the California Water Code that a regional board must wait for 'proof' that a specific RP has polluted a specific well prior to issuing a WRO. In fact, as set forth herein, Section 13304 of the California Water Code only requires that the water provider be affected by the contamination, not by a specific source or sources. Moreover, Section 13304 applies to "waters of the state," which is defined as "any water, surface or underground... within the boundaries of the state." California Water Code §§ 13050, 13304. Accordingly (and contrary to the position of Regional Board Staff), the California Water Code authorizes WROs for discharges of waste to the groundwater, as opposed to discharges to drinking water wells only. Nevertheless, if necessary, experts can now calculate an estimate of the contamination attributable to a specific release, and thus the Regional Board can reasonably quantify the amount of replacement water which should be provided. (See, e.g., Transcript from Hearing of the Select Committee on Perchlorate Contamination, February 27, 2004, testimony of Certified Hydrogeologist Jon Rohrer, pp. 91-92, attached as Exhibit 4.)

II. A WATER REPLACEMENT ORDER SHOULD BE ISSUED TO THE COUNTY

A. Authority for Issuance of WRO

Section 13304(a) of the California Water Code provides in pertinent part as follows:

> "Any person ... who has caused or permitted, causes or permits, or threatens to cause or permit any waste to be discharged or deposited where it is, or probably will be, discharged into the waters of the state and creates, or threatens to create, a condition of pollution or nuisance, shall upon order of the regional board clean up the waste or abate the effects of the waste, or, in the case of threatened pollution or nuisance, take other necessary remedial action, including but not limited to, overseeing cleanup and abatement efforts. A cleanup and abatement order issued by the state board or a regional board may require the provision of, or payment for, uninterrupted replacement water service, which may include wellhead treatment, to each affected public water supplier or private well owner." California Water Code § 13304(a) (emphasis added).

The recently issued WRO to Olin Corporation follows the dictates of the Legislature when it states that "the discharge of perchlorate described in this Order creates, or threatens to create, a condition of pollution or nuisance because, among other reasons, it has interfered with the use of private domestic wells, which contain perchlorate, and has interfered with the use of affected water supplies for municipal and domestic beneficial uses." Similarly, the discharge of perchlorate by the County, as described below, has directly interfered with the use of the Water Purveyors' wells and has adversely affected the Water Purveyors' beneficial use of the Basins. Further, as more fully set forth below, the evidence that has been compiled against the County is more substantial than the identified evidence against Olin Corporation. Accordingly, the issuance of a WRO to the County clearly is appropriate, timely and imperative.

B. Substantial Evidence Exists Regarding the County's Discharge of Perchlorate to the Affected Basins

In 1993, the County acquired approximately 96 acres of land in Rialto, California, to expand the County's Mid-Valley Sanitary Landfill (the "Expansion Area"). The Expansion Area contained 16 bunkers which were constructed during WWII and have been used since then to store explosives and fireworks. A chemical commonly found in those explosives and fireworks was perchlorate.

Documents establish that substantial amounts of perchlorate were used on the Expansion Area by companies that manufactured and tested explosives and fireworks, including, but not limited to, West Coast Loading Corporation, B.F. Goodrich, Aerojet Ordnance, Explosive Technologies, Inc., E.T. Horn, Zambelli Pyrotechnics, King Dupont, and Pyro Spectaculars, Inc. Further, three of the bunkers were used by BROCO, which operated a hazardous waste treatment, storage and disposal ("TSD") facility.[5]

Prior to purchasing the Expansion Area, the County was informed by the sellers of the Expansion Area that the property "was used, for many years, to store and manufacture fireworks and explosives for military and civilian uses and purposes." Nevertheless, the County agreed to fully indemnify, defend and hold the sellers free and harmless from any and all claims, losses, liabilities, penalties, fines, lawsuits, costs and/or damages suffered by sellers arising from hazardous or toxic substances discovered on the property after the County acquired the property.

In 1997, the County was informed that perchlorate was detected in groundwater samples from wells near the Expansion Area, and was advised that the fireworks manufacturing and the BROCO TSD facility were potential sources of perchlorate. In addition, local drinking water wells were shut down due to perchlorate contamination.

In 1998, the City of Rialto passed a Resolution which mandated soil sampling at the Expansion Area and recommendations for site remediation. The Resolution stated that "any remediation shall occur prior to any land disturbance within the Expansion Area."

In 1998, a limited Phase II Site Assessment of the Expansion Area was prepared for the County. Although only twelve soil samples were taken on the entire 96 acres, the report indicated that perchlorate was detected. In addition, perchlorate was detected in wipe samples from various bunkers. Despite Rialto's Resolution and State Law, no remediation occurred.

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[5] A TSD facility is a federally licensed facility at which hazardous waste is intentionally placed into or on any land or water, and at which waste will remain after closure. 40 CFR § 260.10. Note that the owners of the BROCO TSD facility also operated the Denova hazardous waste facility in Rialto, which was fined nearly $2.5 million in 2003 after state investigations found that Denova was storing more than twice the authorized amount of hazardous waste, mixing incompatible hazardous waste and unsafely managing explosive hazardous waste. (See article entitled "State toxic control agency fines Rialto firm $2.5 million," dated February 26, 2003, attached as Exhibit 5.)

Apparently ignoring these detections of perchlorate, in 1999, the County deposited approximately 5.8 million cubic yards of soil on the Expansion Area, resulting in a dirt pile between 50-100 feet high which covered most of the property, and in the process, buried the BROCO TSD facility. The area where the BROCO TSD facility was buried was adjacent to an aggregate processing facility where millions of gallons of water were discharged on the site for the purpose of washing sand and gravel by Robertson's Ready Mix pursuant to a lease agreement with the County, and then processed to manufacture concrete. As admitted by both the County's expert and Regional Board Staff, the close proximity of a washing operation directed by the County to an area where hazardous wastes, specifically perchlorate, were buried was the likely cause of perchlorate migration to and within the groundwater.[6]

Subsequent to the burying of the Expansion Area by the County, elevated concentrations of perchlorate were detected in groundwater samples near the Expansion Area, and approximately twenty (20) drinking water wells owned by local water purveyors were shut down due to perchlorate contamination.

In 2002, the Department of Toxic Substances and Control ("DTSC") and the Integrated Waste Management Board jointly entered into an investigation of the County landfill property. DTSC found that the BROCO TSD facility on the Expansion Area never underwent proper closure requirements pursuant to California law, and required the County to submit a closure plan with a comprehensive sampling program. The sampling program was to include perchlorate "because of the wide variety of explosive hazardous wastes that the [BROCO] facility stored and treated, and the fact that the [BROCO] facility handled hazardous explosive wastes from surrounding fireworks manufacturers that used perchlorate."

In 2002, the County installed six monitoring wells on and in the vicinity of the Expansion Area. The analytical results of this groundwater investigation evidence that perchlorate has been and is being discharged to the groundwater from the Expansion Area. Perchlorate was not detected in groundwater samples obtained from the two wells north (upgradient) of the Expansion Area, but perchlorate was detected in high concentrations (as high

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[6] See Transcript from Hearing of the California Regional Water Quality Control Board, Santa Ana Region, January 17, 2003 (hereinafter "Regional Board Hearing Transcript"). In that hearing, Regional Board staff member Bob Holub and the County's consultant Gary Lass explained that the aggregrate processing facility adjacent to the landfill, which used substantial amounts of water in washing sand and gravel, was the likely cause of the elevated concentrations of perchlorate detected in the Mid-Valley Sanitary Landfill monitoring wells. See Regional Board Hearing Transcript, pp. 18-19, 72-73, attached hereto as Exhibit 6.

as 1,000 ppb—the largest reading in the area) in at least four monitoring wells south and east (downgradient) of the Expansion Area.

On January 17, 2003, at a meeting of the Regional Board, the County admitted responsibility for a portion of the perchlorate pollution of the groundwater. Further, the Regional Board adopted Cleanup and Abatement Order R8-2003-0013, which requires that the County implement a remedial action plan.

Subsequently, the County prepared investigation work plans purportedly to respond to the Cleanup and Abatement Order issued by the Regional Board. However, the work plans and consultant reports prepared by or on behalf of the County have attempted to prove that the Landfill is only responsible for a small "mini plume," rather than the regional perchlorate problem. The County's position is that the plume must be adequately characterized prior to remediation. (See Transcript from Hearing of the Select Committee on Perchlorate Contamination, February 27, 2004, testimony of Gary Lass (the County's consultant), p 56, attached as Exhibit 7.) However, based on the County's repeated mischaracterizations and attempts to misconstrue the data thus far, it could be several more years before an adequate and complete characterization occurs. For example, the County drilled a well in an area with the intent to show that the alleged "mini plume" from the Landfill had not extended to a certain point. However, when tested, that particular well showed significant detections of perchlorate in the groundwater. Thereafter, the County's expert asserted that the very well it had drilled to 'prove' its mini-plume theory was likely within a larger regional release, and that the County must conduct additional testing to further characterize the hydrogeology in the Region. Id. at 56-60.

Since the initial detections of perchlorate over seven years ago, the County has done nothing except direct all of its efforts toward trying to prove its mini-plume theory in an attempt to limit its liability. However, all such investigations have backfired and resulted in more compelling evidence that the County is responsible for a substantial amount of the perchlorate contamination in the Region. Despite all of its posturing and assertions of cooperation, the County has acted just like any other corporate polluter. The County has attempted to deflect the attention of the Water Purveyors and the regulators away from its clear responsibility for a much larger problem. Rather than letting the results and science drive its response to the crisis, the County has attempted to avoid responsibility through its mini-plume strategy. Accordingly, the Regional Board must now utilize its regulatory authority and order the County to provide replacement water now and for all Water Purveyors, rather than waste

valuable time by entertaining more of the County's already discredited efforts to deflect its own very significant responsibility. [7]

C. The Regional Board Has Exhausted All Other Options and Must Now Effectively Utilize, Implement and Uniformly Enforce the California Water Code

Since the initial detections of perchlorate over seven years ago, the Regional Board has successfully identified several responsible parties, obtained records and required some soil testing and groundwater monitoring. However, there has not been enough action directed toward abating the pollution and, more significantly, replacing the very valuable lost water resources. The Regional Board must not continue to indulge the excuses of the polluters so that a year from now nothing more will be accomplished, except for the waste of vast resources on additional theories formulated by the County in an attempt to deflect its responsibility. Instead, the Regional Board can take immediate action to help relieve a clear and present public water supply crisis by invoking its clear legislative authority and issuing the WRO as to the already impacted wells to a clearly identified polluter – the County.

III. CONCLUSION

The widespread perchlorate contamination in the Basins has materially impaired the Water Purveyors' ability to provide safe, reliable water service to their customers. The County continues to manipulate the Regional Board's processes to evade its responsibility to restore the contaminated Basins. The pervasive perchlorate contamination in the Basins has rendered over 52-million gallons per day of public drinking water supplies unusable and left the Water Purveyors imminently vulnerable to water shortages which not only will adversely affect public drinking water supplies, but will mean uncertain and disrupted water supplies for

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[7] The Regional Board is now considering the issuance of a water replacement provision to the existing cleanup and abatement order to the County. This proposed amendment simply does not go far enough. For example, the proposed amendment only addresses the contingencies of potential future contamination at Rialto Well No. 3. There are a total of 20 wells in the area already impacted by perchlorate. Action must be taken now to address the contamination already affecting impacted water production wells. Further, even under the current proposed order, other wells in the area which, like Rialto Well No. 3, are directly threatened by the migrating perchlorate plume even though they do not yet exceed the action level, have not been addressed as part of the contingency plan sought by Staff in the proposed amendment, including, but not limited to: Fontana Water Company Well Nos. F 49-A, F 10-B, F 10-C and WVWD Well No. 33.

commercial, recreational, and industrial uses, and ominously, uncertain water supplies and pressures for public firefighting purposes. The time has come for this Region to enforce the Water Code as the Legislature intended.

California Water Code Section 13304 expressly provides regional water quality control boards with effective enforcement methods by granting them the authority to issue water replacement orders to responsible parties. Indeed, WROs are now being issued in other regions to battle perchlorate contamination where the conditions are not as severe as in the affected Basins. The Santa Ana Regional Board must now follow the lead of these other regional boards by effectively utilizing and implementing, and uniformly enforcing, the California Water Code. Accordingly, a WRO should be issued at once to the County to help avert what is rapidly developing into a clear and present public water supply crisis.

Very truly yours,

Barry C. Groveman
for MUSICK, PEELER & GARRETT LLP

cc: Maureen Gorsen, California Environmental Protection Agency

384697.1

Western drought worst in 500 years

U.S. scientists say parched conditions beat Dust Bowl

Friday, June 18, 2004 Posted: 7:10 AM EDT (1110 GMT)

LAS VEGAS, Nevada (AP) -- The drought gripping the West could be the biggest in 500 years, with effects in the Colorado River basin considerably worse than during the Dust Bowl years, scientists at the U.S. Geological Survey said Thursday.

"That we can now say with confidence," said Robert Webb, lead author of the new fact sheet. "Now I'm completely convinced."

The Colorado River has been in a drought for the entire decade, cutting an important source of water for millions of people across the West, including Southern California.

Environmental groups said the report reinforces the need to figure out a better way to manage the Colorado River before reservoirs run dry.

"The water managers, they just continue to pray for rain," said Owen Lammers, director of Living Rivers and Colorado Riverkeeper. "They just say, well, we hope that things change and we see rain."

The report said the drought has produced the lowest flow in the Colorado River on record, with an adjusted annual average flow of only 5.4 million acre-feet at Lees Ferry, Ariz., during the period 2001-2003. By comparison, during the Dust Bowl years, between 1930 and 1937, the annual flow averaged about 10.2 million acre-feet, the report said.

Scientists use tree-ring reconstructions of Colorado River flows to estimate what conditions were like before record-keeping began in 1895. Using that method, the lowest five-year average of water flow was 8.84 million acre-feet in the years 1590-1594. From 1999 through last year, water flow has been 7.11 million acre-feet.

"These comparisons suggest that the current drought may be comparable to or more severe than the largest-known drought in 500 years," the report said.

The report said the river had its highest flow of the 20th century from 1905 to 1922, the years used to estimate how much water Western states would receive under the Colorado River Compact.

The 1922 compact should now be reconsidered because of the uncertain water flow, said Steve Smith, a

regional director for the Wilderness Society.

The report did not surprise water managers.

Adan Ortega, spokesman for the Metropolitan Water District of Southern California, said the water district has been increasing water storage, buying water from farmers and investing in alternatives to the Colorado River.

"The big lesson is communities cannot afford to put all their eggs in the proverbial basket. You need ... a diverse portfolio of resources," Ortega said.

Herb Guenther, director of the Arizona Department of Water Resources, said the agency continues to plan for a lingering drought.

"It's serious, but the sky is not falling. Of course, we wish it would in the form of rain," he said.

Droughts seldom persist for longer than a decade, the report noted. But that could mean the current drought is only half over.

"If you're a betting person, you will bet that we will come out of this drought next year," Webb said. "It's a very severe event and these things tend to end fast. There are other indications, though, that suggest that this drought could persist for as long as 30 years.

"We don't really know."

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Climatic Fluctuations, Drought, and Flow in the Colorado River

Introduction

Climatic fluctuations have profound effects on water resources in the western United States (Fig. 1). In the arid and semiarid parts of the Southwest, climatic fluctuations affect many hydrologic characteristics of watersheds, including the quantity of base flow, the occurrence of large floods, and the timing of snowmelt runoff (Cayan and others, 1999; Stewart and others, 2004). Since the start of a persistent drought in about the year 2000, inflows to Lake Powell on the Colorado River have been below average, leading to drawdown of both Lakes Mead and Powell, the primary flow-regulation structures on the river (Fig. 2). The recent drought, referred to here as the early 21st century drought, has its origins in several global-scale atmospheric and oceanic processes that reduce delivery of atmospheric moisture to the Colorado River basin. The purpose of this Fact Sheet is to discuss the causes of drought in the Colorado River basin and the predictability of river flows using global climate indices.

Sources of Moisture to the Colorado River Basin

Precipitation is biseasonal (winter and summer) in the Colorado River basin (Fig. 1) on the Colorado Plateau (Hereford and others, 2002). In the headwaters precipitation is evenly distributed across the four seasons, mostly accumulating in snowpacks. Moisture comes from several sources (Fig. 1). Frontal systems in winter and spring originate in the North Pacific Ocean and provide the largest and most important source of moisture. These systems tend to carry moisture at high levels in the atmosphere, and precipitation is orographic, meaning it increases with elevation in the mountainous West. Cold frontal systems produce substantial amounts of snow above about 5,000 feet and rainfall at lower elevations in the Rocky, Uinta, and Wind River Mountains, which are the headwaters of the Colorado River and its principal tributary, the Green River.

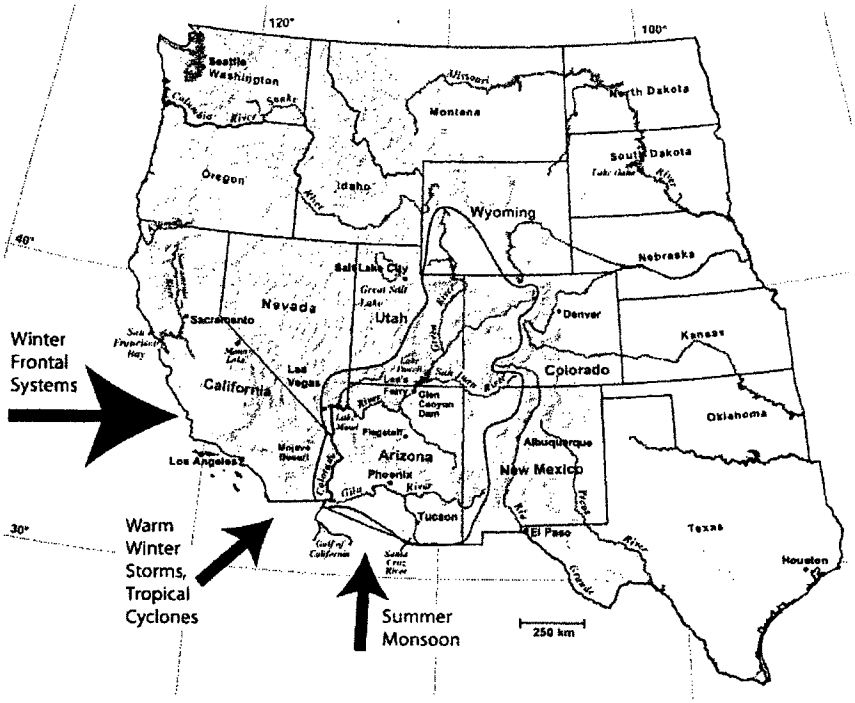

Figure 1. Moisture sources to the Colorado River basin.

These storms build snowpacks that melt in the late spring, providing runoff to the Colorado River. Warm winter storms, which originate in the tropical Pacific Ocean, may cause rainfall on snowpacks, resulting in high runoff and floods on major rivers. The frequency and moisture content of frontal systems are strongly affected by atmospheric circulation patterns (particularly their strength) and sea-surface temperature (SSTs) of the tropical and North Pacific Oceans.

Moisture delivered to the Colorado River basin during summer is typically a mixture of moist air from the Gulf of Mexico, the Gulf of California, and the eastern Pacific Ocean. Known as the "Arizona monsoon," this moisture arrives in July and August at low levels in the atmosphere. The moist air rises rapidly over the desert landscape, spawning thunderstorms that deliver high-intensity rainfall to elevations less than 7,000 feet and lower-intensity rainfall at higher elevations. Thunderstorms tend to be of small spatial extent, and although they spawn severe flash flooding locally, few floods are generated on the larger rivers in the region.

Finally, tropical cyclones, which range from tropical depressions to hurricanes, form in the eastern North Pacific Ocean off the west coast of Mexico. These storms rarely make landfall on the continental United States, instead they dissipate over the ocean. The residual moisture from tropical cyclones, which can be considerable, is either carried inland in weak monsoonal flow during summer months or embedded within stronger cutoff low-pressure systems from the Pacific Ocean. The combination of tropical cyclones and cutoff lows creates conditions for generation of large floods in the southern half of the Colorado River basin.

Indices of Global Climate

Several indices of atmospheric and oceanic processes are used to explain climate variability in the United States. The best-known of these is the El Niño – Southern Oscillation (ENSO) phenomenon in the Pacific Ocean.

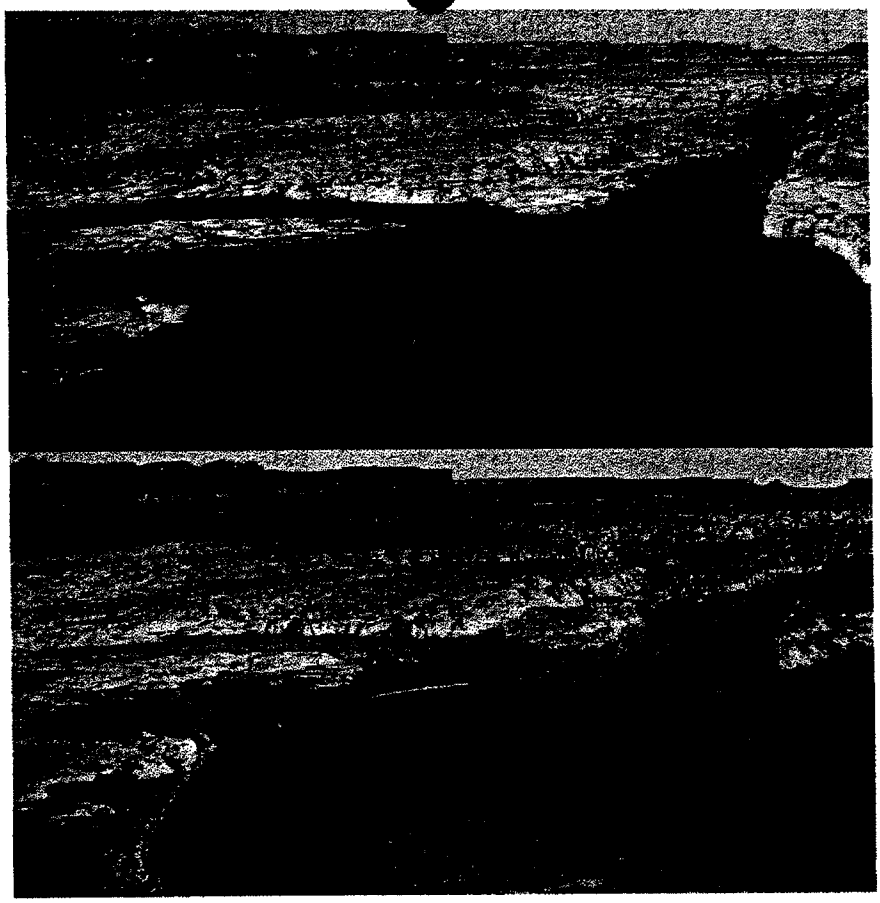

Figure 2. Replicate photographs of Lake Powell at the confluence with the Dirty Devil River (entering from left). A. June 29, 2002. B. December 23, 2003. (Photographs by John C. Dohrenwend.)

The Southern Oscillation Index (SOI) is used to indicate the status of ENSO (Webb and Betancourt, 1992; Cayan and others, 1999). As its name implies, ENSO reflects an oscillation between two basic states of the ocean. The warm phase (negative SOI), called the El Niño, involves warming of the eastern tropical Pacific Ocean off the coast of Peru. The warm water spreads northward in the eastern North Pacific Ocean off the west coast of the United States. The cold phase (positive SOI), called La Niña, is the opposite, resulting in a cooling of the water off western North America. A neutral condition intervenes for several years between the two end states (Fig. 3A).

ENSO reflects interannual variation of climate and helps to explain the occurrence of floods (Webb and Betancourt, 1992) as well as droughts (Cayan and others, 1999). Warm-winter storms tend to be enhanced during El Niño, causing above-average runoff and floods, such as during 1982-1983. Although the incidence of dissipating tropical cyclones tends to be increased during El Niño conditions, the summer monsoon may be diminished in many years. Not all El Niño events lead to increased runoff; for example, runoff during the 2003 El Niño was below average in the Colorado River basin. La Niña conditions, which dominated the period of 1996 through 2002 (punctuated by the El Niño of 1998), caused below-average flow in the Colorado River.

An elaborate index called the Pacific Decadal Oscillation (PDO; Fig. 3B) reflects decadal SST variability and sea-level pressure of the North Pacific Ocean north of 20°N (Mantua and Hare, 2002), and is related to indices of ENSO. The PDO reflects decadal-scale variability and is used to explain long-term periods of above- or below-average precipitation in the region. Shifts in the PDO occurred in about 1944, 1964, and 1977 (McCabe and others, 2004). The recent shift in the PDO in about 1996 is thought to herald a change from wet to dry conditions in the Southwest.

The recently developed index of the Atlantic Multidecadal Oscillation (AMO; Enfield and others, 2001) reflects conditions in the Atlantic Ocean that may affect climate in North America (Fig. 3C). Although the Atlantic Ocean is downstream from the moisture-delivery sources to the Southwest, warm conditions indicated by positive AMO are indicative of drought, for example the Dust Bowl of the early 1930s (Schubert and others, 2004) and at other times during the last century (McCabe and others, 2004). During positive AMO conditions, atmospheric flow is shifted to deliver less moisture to the continental United States. Fluctuations in the AMO, combined with the PDO, may help to explain some of the long-term fluctuations in runoff in the Colorado River basin, while the SOI may explain variation within the shorter-term climatic state.

Drought and Indices of Global Climate

Drought is caused by persistent deficits in precipitation over a region. As such, the severity of droughts is a function of spatial extent, duration, and the magnitude of the precipitation deficit. This combination of variables makes drought prediction an extremely difficult proposition. The record of 20th century drought usually is depicted using the Palmer Drought Severity Index (PDSI), which takes into account both precipitation and potential evapotranspiration. Using a state-wide PDSI index (Fig. 3D; National Oceanic and Atmospheric Administration, 2004), the most severe droughts in Utah occurred between about 1896 and 1904, during the early 1940s, between 1948 and 1963 (the mid-century drought), between 1972 and 1976, from 1985 through 1991, and after 1996.

Researchers use a combination of the SOI, PDO, and AMO indices to explain the occurrence and spatial extent of droughts (McCabe and others, 2004). Persistent positive SOI conditions (La Niña) are indicative that a drought of at least short-term duration is going to occur in the Southwest. In contrast, persistent negative SOI conditions, which indicate the occurrence of El Niño, indicate a potential range from drought to extremely wet conditions. However, neither La Niña nor El Niño conditions persist for more than 2-4 years before switching states. Long-term droughts, such as the mid-century event, are associated with persistent negative PDO and positive AMO indices.

Flow in the Colorado River

Flow in the Colorado River has varied significantly during the 20th century. Lee's Ferry (Fig. 1), is the separation point of flow between the upper-basin states of Wyoming, Colorado, Utah, and

New Mexico and the lower-basin states of Nevada, Arizona, and California as determined in the Colorado River Compact of 1922. Calendar-year flow volumes presented in Figure 3E were combined from three data sets that were measured or estimated using different techniques. The primary data for the Colorado River at Lee's Ferry were collected from the start of streamflow gaging in 1923 through 1962, one year before flow regulation began at Glen Canyon Dam. From 1895 through 1922, we use annual flow volumes at Lee's Ferry that were estimated by LaRue (1925, p. 108).

From 1963 through 2003, we assume that flow at Lee's Ferry can be approximated as the sum of flow volumes of the principal rivers flowing into Lake Powell. From 1950 through 1962, comparison of these inflows with measured flow at Lee's Ferry indicated that the inflow was on average 290,000 acre-feet per year less than the measured flow (about 2% of annual flow volume). Although this is well within measurement error of gaging stations, we used the simple linear regression,

$$Q_{LF} = 1.044 \cdot Q_{in} - 0.1688, (R^2 = 0.999)$$

where Q_{LF} = annual flow volume at Lee's Ferry and Q_{in} = annual inflows to Lake Powell, to increase the inflows to Lake Powell for the period of 1963 through 2003. We also estimated annual volumes for the peak runoff season of April through July (Fig. 3F) for 1923 through 2003 (LaRue (1925) did not estimate monthly volumes).

The time series of flow volumes (Fig. 3E-F) shows that the average annual volume is 12.4 MAF from 1895 through 2003. This volume is less than the more-commonly quoted annual volume of 15.1 MAF because our analyses do not include water that is consumptively used in the upper basin states. This usage is partially reflected by regression of annual and seasonal (April through July) flows, which indicate that flow volumes in the Colorado River at Lee's Ferry have decreased by about 0.5 MAF/decade from 1895 through 2003 (Figs. 3E, 3F).

The period 1905 to 1922, which was used to estimate water production allocated under the Colorado River Compact, had the highest long-term annual flow volume in the 20th century, averaging 16.1 million acre feet (MAF) at Lee's Ferry. The highest annual flow volume occurred in 1984 (22.2 MAF), and the highest three-year average is 20.3 MAF for 1983-1985. The lowest annual flow volume is 3.8 MAF in 2002, followed by 3.9 MAF in 1934 and 4.8 MAF in 1977. The early 21st century drought is

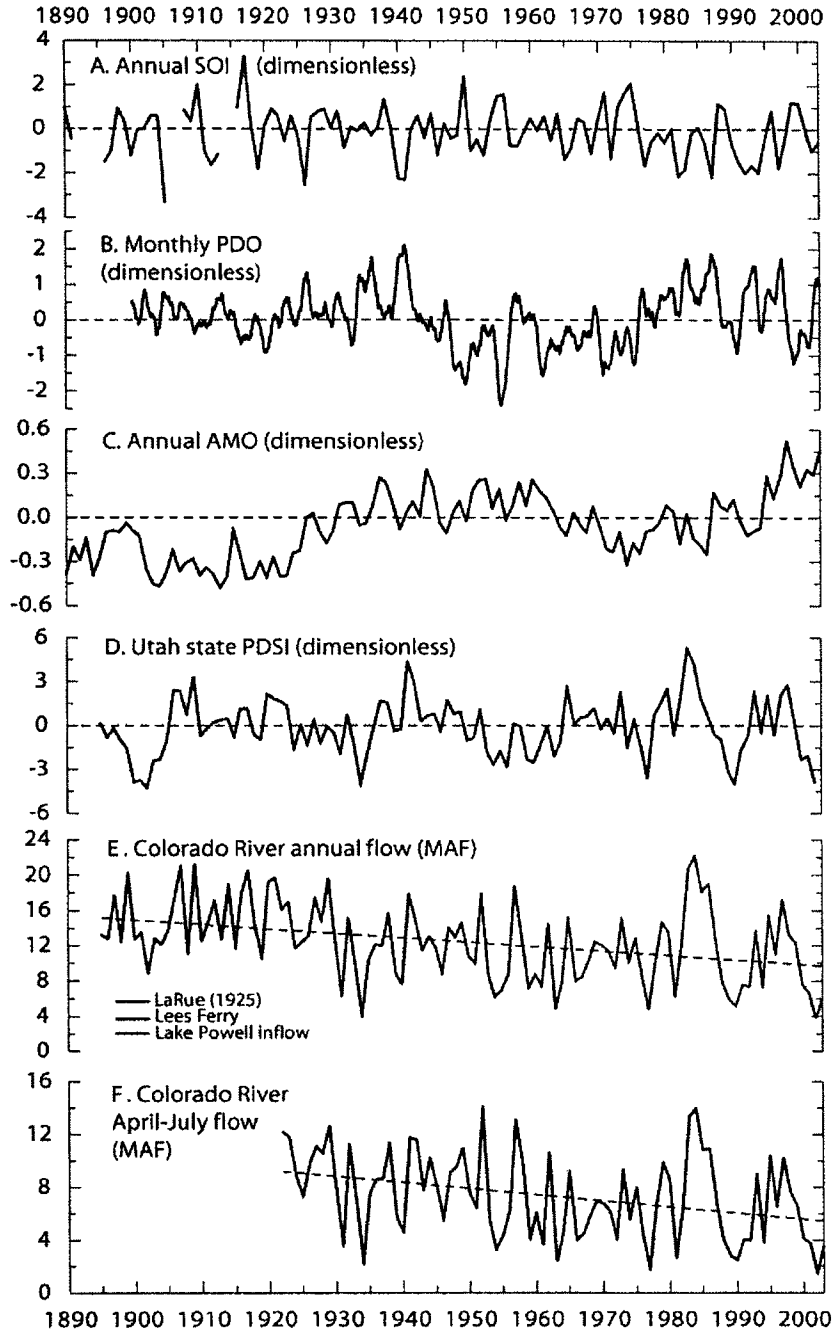

Figure 3. Graphs showing indices of global climate and annual flow volumes of the Colorado River from 1895 through 2003. A. Southern Oscillation Index (SOI). B. Pacific Decadal Oscillation (PDO). C. Atlantic Multdecadal Oscillation (AMO). D. Palmer Drought Severity Index (PDSI) for Utah. E. Annual flow volume. F. April-July flow volume. (A-D are dimensionless; E and F are in millions of acre-feet).

the most severe in terms of flow deficit in more than a century. The current drought also has produced the lowest flow period in the record, with an average of only 5.4 MAF for 2001-2003. In contrast, the drought of the Dust Bowl years between 1930 and 1937 produced an average of 10.2 MAF. The predicted inflow into Lake Powell for 2004 is 49% of the long-term average (5.6 MAF), which indicates that the early 21st century drought is on-going (McCabe and others, 2004).

Colorado River Flow and Multidecadal Climate Variability

Colorado River flow is related to

the indices of multidecadal climate variability, although in a complex way. From an interannual perspective, large floods and high runoff volumes typically occur during strong El Niño conditions, whereas La Niña conditions typically cause low-flow conditions (Webb and Betancourt, 1992). Hereford and others (2002) showed that precipitation on the Colorado Plateau is related to both the SOI and PDO indices. Other statistical analyses show that flows in the river only can be partially explained by the PDO (Hidalgo and Dracup, 2004). Our ability to predict water resources in the Colorado River basin remains poor.

As shown in Figure 4, variability in flow of the Colorado River is a complex response to both the AMO and PDO. Above-average flows reliably occur when the AMO index is negative and the PDO index is between –0.5 and +0.5. Below-average flows generally occur when the AMO is positive (Fig. 4). The deepest droughts appear strongly related to a range in AMO index from –1.0 to +1.0 (mostly from 0 to +1.0) and a PDO index of approximately –0.5. Figure 4 underscores the concept that drought results from a complex set of climatological factors that are not easily predicted or explained.

The watershed of the Colorado River spans a large latitudinal range, and precipitation patterns over that gradient do not respond in concert to regional and (or) multidecadal climatic fluctuations. Above-average runoff in part of the watershed (*e.g.*, the northern half) may overcome low runoff in other parts (*e.g.*, the southern half) during some droughts. For example, the mid-century drought, which was severe on the Colorado Plateau, caused only slightly below-average runoff in the entire basin; the average runoff volume during this period was 11.1 MAF. Similarly, the early 20th century drought (Fig. 3D) had an average runoff volume of 13.6 MAF. As a result, much of the variability in the annual flow record (Fig. 3E-F) is not easily explained by the PDO and AMO indices despite some compelling graphical relations (Fig. 4).

Dendrochronology and Colorado River Flows

Tree-ring reconstructions of Colorado River flows provide a longer-term flow record that can be used to assess drought frequency. One of the most important conclusions from dendrochronology is that the period from 1906 through 1930, which was partially used to determine flow allocations under the Colorado River Compact, was likely the highest period of runoff in 450 years (Stockton and Jacoby, 1976). This suggests that the most unusual aspect of Colorado River runoff during the 20th century is the high runoff volume in certain periods (1906-1920, 1983-1985), not the drought periods. The decade with the lowest annual flow volume (averaging about 9.71 MAF) reconstructed using dendrochronology occurred from A.D. 1584-1593 (Meko and others, 1995). For comparison, the 10-year period of 1995 through 2004 (2004 is a predicted volume) produces an average annual flow volume of 9.9 MAF (not corrected for upstream diversions or use). Similarly, the lowest 5-year average using tree rings is 8.84 MAF (A.D. 1590-1594), compared with 7.11 MAF from 1999 through 2003. These comparisons suggest that the current drought may be comparable to or more severe than the largest-known drought in 500 years.

The wide range of predictions of the persistence of the current drought reflect the poor explanation of past Colorado River flows using climatic indices. If the primary control on drought in the Colorado River basin is the AMO, then drought conditions might continue for several decades owing to the persistence of SST warming in the Atlantic Ocean (McCabe and others, 2004). Similar arguments are based on persistence of the PDO, although this index is currently positive (Fig. 3B), which suggests that a return to normal or above-average conditions may be imminent. As indicated by the tree-ring reconstructions, droughts seldom persist for longer than a decade, and if that remains the case, the current drought is only half over.

Robert H. Webb, Gregory J. McCabe, Richard Hereford, and Christopher Wilkowske

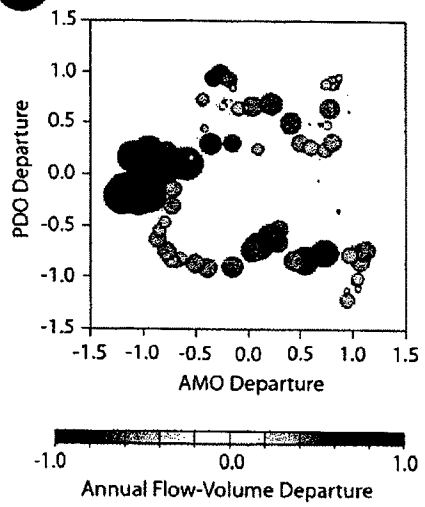

Figure 4. Graph showing above and below average Colorado River flows compared with the Atlantic Decadal Oscillation (AMO) and Pacific Decadal Oscillation (PDO). Flow magnitudes are indicated by circle color and diameter.

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Terry Tamminen
Secretary for Environmental Protection

California Regional Water Quality Control Board

Central Coast Region

Arnold Schwarzenegger
Governor

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Phone (805) 549-3147 • FAX (805) 543-0397

July 6, 2004

Mr. Richard W. McClure
Olin Corporation
Environmental Remediation Group
PO Box 248
Charleston, TN 37310-0248

Certified Mail No. 7000 0520 0019 0359 6988

Return Receipt Requested

Mr. Jay McLaughlin
President and CEO
Standard Fusee Corporation
PO Box 1047
Easton, MD 21601

Dear Messer's McClure and McLaughlin:

SLIC: 425 TENNANT AVENUE, MORGAN HILL; CLEANUP OR ABATEMENT ORDER NO. R3-2004-0101, 425 TENNANT AVENUE FACILITY, SANTA CLARA COUNTY

Enclosed is Cleanup and or Abatement Order (Order) No. R3-2004-0101. This Order directs you to supply uninterrupted replacement water to well owners with perchlorate-contaminated wells. Olin Corporation and Standard Fusee Corporation (hereafter "Discharger") have been named in this Order because it is or was the sites' owner and or operator.

This Order establishes criteria for supplying interim and long-term uninterrupted water service to private well owners with perchlorate-contaminated wells. The Order requires Discharger to provide interim uninterrupted water to well owners whose wells meet two important criteria. The first criteria is for wells that test at or higher than 4ppb. Well owners with wells that test at or higher than 4 ppb shall be supplied interim uninterrupted water service (currently bottle water). The Order also establishes a mechanism for stopping bottled water supply to these wells and includes follow up monitoring. The second criterion is for wells that test less than 4 ppb. For those wells, Discharger may cease supply of uninterrupted water service if, after four quarters of testing, the results remain less than 4 ppb. However, the Order will still require additional testing to monitor perchlorate groundwater concentrations.

The Order also requires Discharger to begin implementation of long term uninterrupted water supply service for wells with concentrations at or above 10 ppb. As part of this requirement, Discharger will be submitting a time schedule for long-term uninterrupted water supply implementation. In addition, Discharger is required to submit a detailed plans for long term uninterrupted water supply

options for wells with concentrations ranging from 4 to 9.9 ppb. Once this plan is Approved by the Executive Officer, Discharger will be required implement the plan.

As noted in the Order, any person affected by the Order may petition the State Water Resources Control Board for review within 30 days. (California Water Code §13320.) You may also request a Regional Board hearing by contacting Staff Counsel **Lori T. Okun by facsimile to (916) 341-5199** within 30 days of receipt of this letter. The hearing will be conducted by the Regional Board at a public meeting or by the Executive Officer, as determined by the Executive Officer. A hearing by the Executive Officer may consist of a review of the written record after interested parties have had the opportunity to submit any additional written materials. Any hearing will be open to Olin Corporation, Standard Fusee Corporation and other interested persons. A request for a Regional Board hearing does not toll or otherwise extend the 30-day period for filing a petition with the State Board pursuant to Water Code Section 13320.

If you have questions, please call **David Athey at (805) 542-4644** or Eric Gobler at (805) 549-3467.

Sincerely,

Roger W. Briggs
Executive Officer

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Attachment: Order No. R3-2004-0101

cc via E-mail:

Ms. Lori Okun
Office of the Chief Counsel
State Water Resources Control Board

Mr. Jim Ashcraft
City of Morgan Hill

Mr. Rich Chandler
Komex

Mr. Peter Forest
San Martin County Water

Ms. Sylvia Hamilton
PCAG

Mr. Tom Mohr
Santa Clara Valley Water District

PCAG Members

Elected Officials

U.S. Environmental Protection Agency

Mr. Steven L. Hoch
Hatch & Parent

cc via U.S. Mail:

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CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL COAST REGION
895 Aerovista Place, Suite 101
San Luis Obispo, California 93401-7906

CLEANUP OR ABATEMENT ORDER NO. R4-2004-0101

Issued to

Olin Corporation and Standard Fusee, Incorporated
425 Tennant Avenue, Morgan Hill
Santa Clara County

The California Regional Water Quality Control Board, Central Coast Region (hereafter Regional Board) finds:

1. Olin Corporation and Standard Fusee, Incorporated, (hereafter "Discharger") discharged or permitted the discharge of potassium perchlorate (hereafter "perchlorate") to waters of the state underlying a manufacturing facility located at 425 Tennant Avenue, Morgan Hill (hereafter "Property").

2. Section 13304(a) of the California Water Code provides that:

> "Any person ... who has caused or permitted, causes or permits, or threatens to cause or permit any waste to be discharged or deposited where it is, or probably will be, discharged into the waters of the state and creates, or threatens to create, a condition of pollution or nuisance, shall upon order of the regional board clean up the waste or abate the effects of the waste, or, in the case of threatened pollution or nuisance, take other necessary remedial action, including but not limited to, overseeing cleanup and abatement efforts. A cleanup and abatement order issued by the state board or a regional board may require the provision of, or payment for, uninterrupted replacement water service, which may include wellhead treatment, to each affected public water supplier or private well owner. Upon failure of any person to comply with the cleanup or abatement order, the Attorney General, at the request of the board, shall petition the superior court for that county for the issuance of an injunction requiring the person to comply with the order. In the suit, the court shall have jurisdiction to grant a prohibitory or mandatory injunction, either preliminary or permanent, as the facts may warrant."

3. Section 13050(*l*) of the California Water Code defined "pollution" as an alteration of the water quality to a degree that unreasonably affects either beneficial uses or facilities that serve these beneficial uses. Section 13050(m) defines "nuisance" as "anything which meets all of the following requirements: (1) Is injurious to health, or is indecent or offensive to the senses, or an obstruction to the free use of property, so

as to interfere with the comfortable enjoyment of life or property. (2) Affects at the same time an entire community or neighborhood, or any considerable number of persons ... (3) Occurs during, or as a result of, the treatment or disposal of wastes."

4. Pursuant to Chapter 2 of the Water Quality Control Plan, Central Coast Region, (Basin Plan), present and potential beneficial uses of groundwater underlying the Property, and down gradient, include domestic and municipal water supply, agricultural water supply, and industrial water supply.

5. Perchlorate is a hazardous substance. The perchlorate detected at the site is waste as defined in California Water Code Section 13050(d). There is no Basin Plan water quality objective for perchlorate in groundwater. The current cleanup standard for perchlorate, as required by State Water Resources Control Board Resolution No. 92-49 is background or the lowest feasible levels, as described in Finding 10, below.

6. The discharge of perchlorate described in this Order creates, or threatens to create, a condition of pollution or nuisance because, among other reasons, it has interfered with the use of private domestic wells, which contain perchlorate, and has interfered with the use of affected water supplies for municipal and domestic beneficial uses.

7. The former Olin Corporation site is a 13-acre parcel located in southern Morgan Hill. Olin Corporation manufactured signal flares at the Property for about 32 years from 1956 to 1988. Standard Fusee Corporation leased the site and manufactured signal flares for seven years from 1988 to 1995. Potassium perchlorate was used by the Discharger to manufacture flares from 1956 to 1995. Perchlorate contamination at the site may have occurred primarily from an unlined evaporation pond and sumps that received wastes from the cleaning of the ignition material mixing bowls, on-site incineration of cardboard flare coatings with potassium perchlorate residues, and accidental spills.

8. The Discharger caused or allowed perchlorate-containing wastes to be discharged to the soil and groundwater underlying the Property. Due to the naturally permeable and transmissive nature of underlying and down gradient hydrogeology, perchlorate-containing wastes have impacted soils and groundwater beyond the Property. The following reports detail the presence of perchlorate in soil and/or groundwater at, and beyond, the Property:
   - Environmental Engineering Consultant's *Perchlorate Investigation* dated December 7, 2000
   - Environmental Engineering Consultant's *Perchlorate Investigation* dated March 21, 2001
   - Law Engineering and Environmental Service's *Soil and Groundwater Investigation Report for the Olin/Standard Fusee Property* dated May 16, 2002
   - MACTEC Engineering Consultant's *Phase 3 Soil and Groundwater Investigation Report* dated December 2, 2002

- MACTEC Engineering Consultant's *Phase 3 Soil and Groundwater Investigation and Remedial Action Conceptual Design Report* dated June 30, 2003
- GeoSyntec Consultant's *Soil Remediation Feasibility Study* dated November 21, 2003
- MACTEC Engineering and Consulting's *Third Quarter 2003 Groundwater Monitoring Report* dated October 30, 2003
- MACTEC Engineering and Consulting's *Fourth Quarter 2003 Groundwater Monitoring Report* dated January 30, 2004
- MACTEC Engineering and Consulting's *First Quarter 2004 Groundwater Monitoring Report* dated April 30, 2004

The maximum perchlorate concentration detected in groundwater beneath the Property (at well MW-01) was 770 parts per billion (ppb) during the October 27, 2003, groundwater-sampling event. Measurable perchlorate concentrations in the nine plus mile offsite groundwater plume range from 2 ppb to a maximum of 100 ppb. Perchlorate presence, as noted above and in Finding 10, constitutes a condition of pollution and or nuisance, as defined in California Water Code Section 13050.

9. Since October 22, 2002, Olin Corporation (hereafter "Olin") has been supplying interim uninterrupted replacement water, in the form of bottled water, to affected private well owners with perchlorate detections at 4 ppb or higher. On April 7, 2004, Olin requested that Regional Board staff reconsider the 4 ppb interim uninterrupted replacement water supply level since the Department of Health Services (DHS) Action Level was changed to 6 ppb, based on the Office of Emergency Health Hazard Assessment's public health goal. In a response dated April 29, 2004, the Regional Board Executive Officer determined it necessary to maintain the 4 ppb level for interim uninterrupted replacement water supply. Consequently, the Discharger was directed to keep providing bottled water, on an interim basis, to people whose wells contained perchlorate above 4 ppb.

10. The 4 ppb interim uninterrupted replacement water supply level is 2 ppb lower than the DHS Action Level. However, this requirement is appropriate pursuant to Section 13304. First, alternative water would not be required if the perchlorate had not been discharged. While some wells are below 6 ppb, perchlorate, at any level, is not considered a background constituent of local groundwater. The natural background perchlorate concentration in the Llagas groundwater sub-basin and vicinity is zero. Since the perchlorate discharge has caused a condition of pollution or nuisance and has impacted groundwater beneficial uses, Olin is required to abate potential and actual effects. State Water Resources Control Board Resolution No. 92-49 applies to all cleanup and abatement activities, including providing alternate water supplies. The Resolution requires dischargers to "clean up *and abate* the effects of discharges in a manner that promotes attainment of either background water quality, or the best water quality which is reasonable if background levels of water quality cannot be restored, considering all demands being made and to be made on those waters and the

total values involved, beneficial and detrimental, economic and social, tangible and intangible." (Id., Section III.G.) Cleanup levels less stringent than background must comply with Section 20400, Title 27, California Code of Regulations (formerly Section 2550.4, Title 23, California Code of Regulations). The Discharger has not demonstrated that cleanup levels above background are appropriate or that background levels cannot be restored. Since the groundwater supplying the polluted wells must be cleaned up to background, absent such demonstration, replacement water should meet the same standard.

Second, perchlorate Public Health Goals, also called Reference Dose by some government agencies (hereafter referred to collectively as "public health goal"), have been established by both the California Office of Environmental Health Hazard Assessment (OEHHA) and the state of Massachusetts Department of Environmental Protection. The United States Environmental Protection Agency (USEPA) has also established a perchlorate public health goal. The public health goal is used by the respective states and federal government in establishing drinking water standards. There is general agreement among these entities that the most sensitive receptor populations are pregnant women, infants, developing children, and hypothyroid individuals. While the USEPA's and Massachusetts' public health goal is 1 ppb, California's is 6 ppb. The difference between California's and the USEPA and Massachusetts' public health goals is based on the uncertainty factor used. The USEPA and Massachusetts public health goal is calculated using a larger uncertainty factor, which they believe assures protection of the most sensitive populations. The OEHHA level also strives to be protective of sensitive populations, but differs in magnitude. The states of Massachusetts and California are both awaiting the National Academy of Science's (NAS) final recommendations on an acceptable public health goal. Both states have pledged to re-review their public health goals, if the NAS study differs from each state's respective goal. Since the states' and USEPA's toxicological risk assessments differ in regard to an appropriate uncertainty factor, a public health goal, and because the NAS study is still underway, it is appropriate to continue requiring interim uninterrupted replacement water supply at the conservative levels described below in ordering paragraphs 1 and 2.

Lastly, groundwater elevations and quality show variance during the wet and dry seasons. Monitoring data demonstrates that perchlorate concentrations in wells that are 6 ppb and over could and have occasionally and temporarily dropped below 4 ppb. Many well owners that now receive bottled water only have one or two sample results for their well, which may not reflect seasonal variations in perchlorate concentrations. Such variance must be considered when determining conditions for interim uninterrupted water supply.

11. Olin has also supplied interim uninterrupted replacement water (bottled water) to some well owners with perchlorate detections less than 4 ppb. However, if perchlorate detections remain less than 4 ppb or non-detect for four quarters, the Regional Board Executive Officer agreed that Olin may end alternative water supply

to the specific well owner. Olin recently sent a blanket letter to over 400 interim uninterrupted replacement water recipients notifying them that bottled water delivery would cease on or about June 4, 2004. It is not known if those well owners had a minimum of four sample results prior to cessation of bottled water delivery.

12. Olin submitted an Alternative Water Supply Evaluation report on April 16, 2004, that outlines alternative water supply options for perchlorate-impacted well owners. Regional Board staff directed Olin to evaluate uninterrupted replacement water supply options for wells with perchlorate concentrations ranging from 4, 6, 8, 10, 16 and 40 ppb. Olin's report did not evaluate alternatives for wells with concentrations below 6 ppb, the current Department of Health Services Action Level.

13. This enforcement action is being taken for the protection of the environment and as such is exempt from the provisions of the California Environmental Quality Act (Public Resources Code Section 21000, et seq.) in accordance with Sections 15307 and 15308, Chapter 3, Title 14, California Code of Regulations. The issuance of this Order is also an enforcement action taken by a regulatory agency and is exempt from the provisions of the California Environmental Quality Act (Public Resources Code, Section 21000, et seq.), pursuant to Section 15321(a)(2), Title 14, CCR.

14. Pursuant to Section 13304 of the California Water Code, the Regional Board is entitled to, and may seek, reimbursement for all reasonable costs actually incurred by the Regional Board to investigate unauthorized discharges of wastes or to oversee cleanup of such waste, abatement of the effect thereof, or other remedial action pursuant to this Order.

15. Any person affected by this action of the Regional Board may petition the State Water Resources Control Board (State Board) to review the action in accordance with Section 13320 of the California Water Code and Title 23, California Code of Regulations, Section 2050. The State Board, Office of Chief Counsel, must receive the petition within 30 days of the date of this Order. Copies of the law and regulations applicable to filing petitions will be provided upon request.

16. Section 13267(b) of the California Water Code provides that:

> "In conducting an investigation specified in subdivision (a), the regional board may require that any person who has discharged, discharges, or is suspected of having discharged or discharging, or who proposes to discharge waste within its region, or any citizen or domiciliary, or political agency or entity of this state who has discharged, discharges, or is suspected of having discharged or discharging, or who proposes to discharge, waste outside of its region that could affect the quality of waters within its region shall furnish, under penalty of perjury, technical or monitoring program reports which the regional board requires. The burden, including costs, of these reports shall bear a reasonable relationship to the need for the report and the benefits to be obtained from the

reports. In requiring those reports, the regional board shall provide the person with a written explanation with regard to the need for the reports, and shall identify the evidence that supports requiring that person to provide the reports."

As described in this Order, existing data and information about the site indicates that waste has been discharged or is discharging from the facilities described above, which facilities are owned or operated, or formerly owned or operated by the Discharger named in this Order.

This Order requires monitoring, work plans and reports pursuant to Water Code Section 13267. This finding is made in compliance with Section 13267. The work plans and monitoring required by this Order are necessary to design a water replacement plan and implementation schedule and to determine compliance with this Order.

IT IS HEREBY ORDERED, pursuant to Sections 13267 and 13304 of the California Water Code that the Discharger abate the discharge of waste at and near the Property as follows:

1. Effective immediately, Discharger shall supply interim uninterrupted replacement water service (i.e., bottled water or equivalent), in accordance with California Water Code Section 13304, to owners of private domestic wells in which perchlorate has been detected at concentrations at or above 4 ppb at any time within the past four consecutive quarters. Discharger may stop supplying interim uninterrupted water service upon the Regional Board Executive Officer's concurrence that long term uninterrupted water service has been provided to individual well owners or there have been four consecutive quarters of non-detect (using a maximum Method Detection Limit of 2 ppb) or less than 4 ppb results. However, if interim uninterrupted water service is stopped because one of the above mentioned conditions is satisfied, the Discharger shall continue to monitor the private wells in question for perchlorate semi-annually for one year. If perchlorate groundwater concentrations remain at trace or non-detect levels during that time, the Discharger shall monitor the private wells annually for two years. If perchlorate groundwater concentrations remain non-detect or trace during that two-year period, the Discharger may stop sampling with the Executive Officer's concurrence.

Such a standard can be applied in the Inland Empire.

2. Effective immediately, Discharger shall supply interim uninterrupted replacement water service (i.e., bottled water or equivalent), in accordance with California Water Code Section 13304, to owners of private domestic wells in which perchlorate has been detected at concentrations below 4 ppb. Discharger may stop supplying interim uninterrupted water service upon the Regional Board Executive Officer's concurrence that long term uninterrupted water service has been provided to individual well owners or there have been four consecutive quarters of non-detect (using a maximum Method Detection Limit of 2 ppb) or less than 4 ppb results. However, if interim uninterrupted water service is stopped because one of the above mentioned conditions

is satisfied, the Discharger shall continue to monitor the private wells in question for perchlorate semi-annually for one year. If perchlorate groundwater concentrations remain at trace or non-detect levels during that time, the Discharger shall monitor the private wells annually for two years. If perchlorate groundwater concentrations remain non-detect or trace during that two-year period, the Discharger may stop sampling with the Executive Officer's concurrence. If perchlorate is detected at or above 4 ppb at any time, the Discharger shall provide uninterrupted water service in accordance with Paragraph 1.

3. **By October 29, 2004**, Discharger shall submit a detailed Alternative Water Supply Implementation Work Plan for uninterrupted replacement water, for wells with perchlorate concentrations from, and including, 4 ppb to 9.9 ppb. The work plan shall include: a detailed evaluation of water production rates, infrastructure needs, water usage rates, and estimated timetables for implementation.

4. Following Executive Officer concurrence with the detailed Alternative Water Supply Implementation Work Plan for wells with concentrations from 4 ppb to 9.9 ppb, Discharger shall implement the plan according to a schedule approved by the Executive Officer.

5. Discharger shall provide long term uninterrupted water service to affected well owners with perchlorate concentrations at 10 ppb (or above) as outlined in MACTEC's April 16, 2004 *Alternative Water Supply Evaluation report* (Report). The Report discusses uninterrupted water replacement options for each of these 15 individual wells. If the Discharger identifies ion exchange treatment as the most effective alternative, Discharger shall submit a schedule for implementation within **30 days following** certification by DHS. However, if ion exchange is not certified by March 31, 2005 or if DHS denies certification, Discharger shall select an alternate long term replacement water option by **May 2, 2005** or within 30 days after DHS denies certification (whichever is earlier). Discharger shall implement the alternative option in accordance with a schedule approved by the Executive Officer. Discharger may elect to implement ion exchange technology before DHS acts on the certification, in lieu of selecting an alternative option, as long as Discharger also provides bottled water until DHS issues the certification.

6. Interim and long-term replacement water shall comply with California Water Code Section 13304(f).

The Discharger shall be liable, pursuant to California Water Code Section 13304, to the Regional Board for all reasonable costs incurred by the Regional Board to investigate unauthorized discharges of waste, or to oversee cleanup of such waste, abatement of the effects thereof, or other remedial action, pursuant to this Order. The Discharger shall reimburse the Regional Board for all reasonable costs associated with Property investigation, oversight and cleanup. Failure to pay any invoice for the Regional Board's investigation or oversight costs within the time stated in the invoice (or within thirty days

after the date of invoice, if the invoice does not set forth a due date) shall be considered a violation of this Order. If the Property is enrolled in a State Board-managed reimbursement program, reimbursement shall be made pursuant to this Order and according to the procedures established in that program.

All technical and monitoring plans and reports required in conjunction with this Order are required pursuant to Section 13267 of the California Water Code and shall include a statement by the Discharger, or an authorized representative of the Discharger, certifying (under penalty of perjury in conformance with the laws of the State of California) that the work plan and/or report is true, complete, and accurate. Hydrogeological reports and plans shall be prepared or directly supervised by, and signed and stamped by a registered geologist and/or an appropriately licensed engineer.

This Order in no way limits the authority of this Regional Board to institute additional enforcement actions or to require additional investigation and cleanup at the facility consistent with California Water Code. This Order may be revised by the Executive Officer as additional information becomes available.

FAILURE TO COMPLY WITH THE PROVISIONS OF THIS ORDER MAY SUBJECT YOU TO FURTHER ENFORCEMENT ACTION, INCLUDING BUT NOT LIMITED TO, ASSESSMENT OF CIVIL LIABILITY UNDER SECTIONS 13268 AND 13350 OF THE CALIFORNIA WATER CODE AND REFERRAL TO THE DISTRICT ATTORNEY OR ATTORNEY GENERAL FOR INJUNCTIVE RELIEF AND CIVIL OR CRIMINAL LIABILITY.

Roger W. Briggs
Executive Officer

7-6-04
Date

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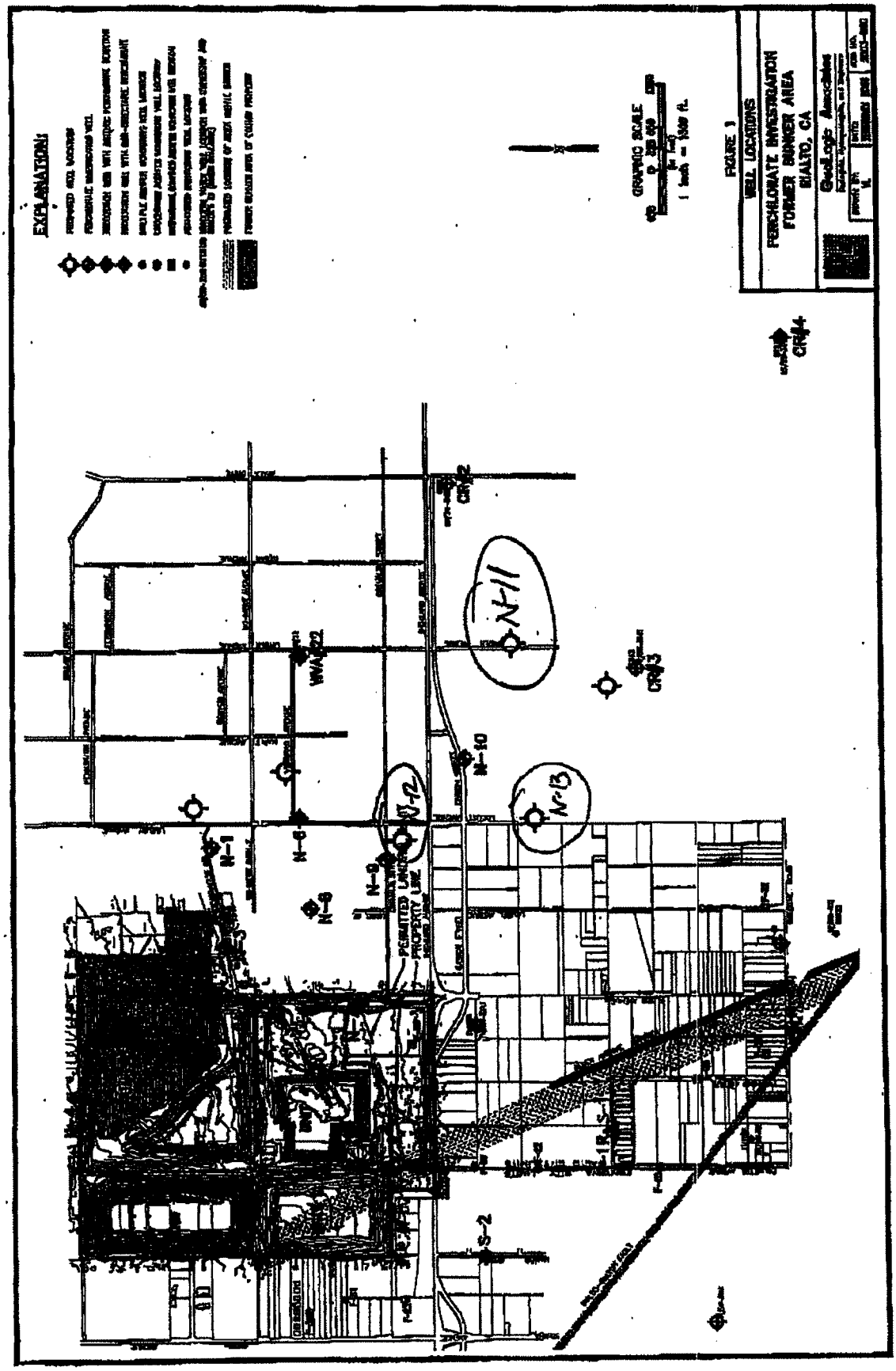
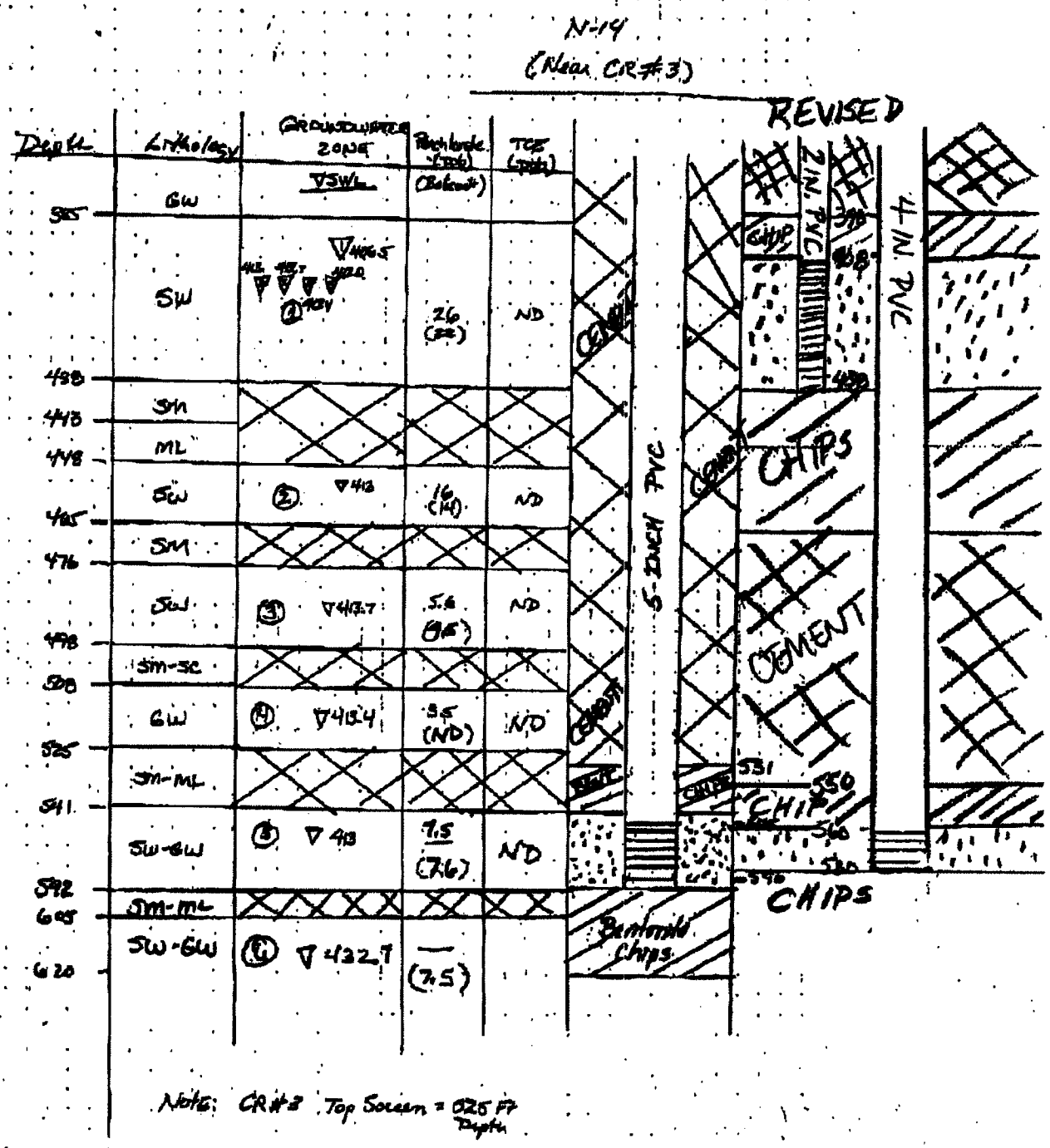
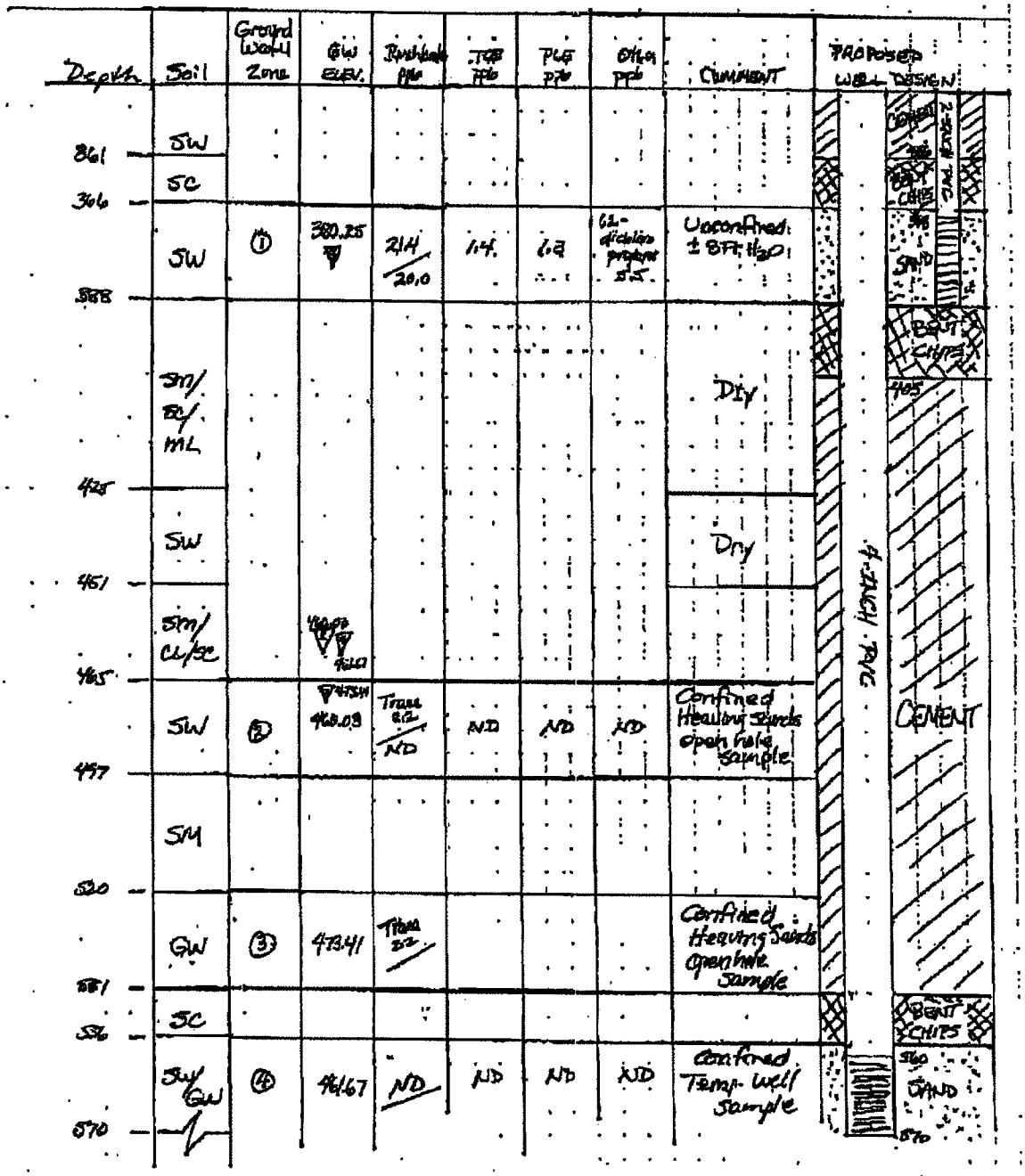

EXPLANATION:
GRAPHIC SCALE
FIGURE 1
WELL LOCATIONS
PERCHLORATE INVESTIGATION
FORMER BUNKER AREA
RIALTO, CA
Geologic Associates
N-11
N-12
N-13
N-10
N-9
N-1
N-2
PERMITTED UNDER
PROPERTY LINE
CR#4
CR#2
CR#3
WA#22
S-2


N-14
(Near CR#3)
REVISED
Depth
Lithology
Groundwater Zone
Perchlorate (PPB)
TCE (PPB)
GW
SW
SM
ML
SW
SM
SW
SM-SC
GW
SM-ML
SW-GW
SM-ML
SW-GW
385
438
443
448
465
476
498
508
525
541
592
605
620
26
ND
16
ND
5.6
ND
3.5
ND
7.5
ND
7.5
2" PVC
4-IN PVC
5-INCH PVC
CEMENT
CHIPS
CEMENT
CHIPS
CHIPS
Bentonite Chips
Note: CR#3 Top Screen = 525 FT Depth

N-13 off Locust



Select Committee on Percholorate Contamination

February 27, 2004

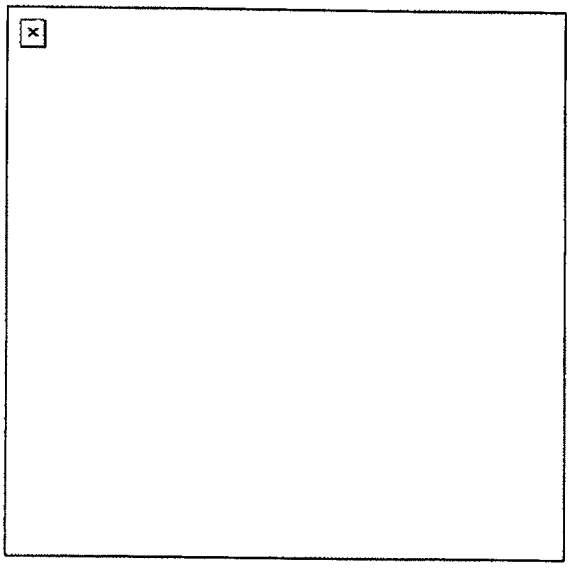
Fontana City Hall
Fontana, California

SENATOR NELL SOTO: We're waiting for Senator Escutia is on her way. And we're gonna wait a few more minutes to see if she gets here. And when she does, hopefully she'll be here pretty soon. Have you heard any, how long it's gonna be before she gets here?

UNIDENTIFIED: We haven't heard yet, Senator, _____.

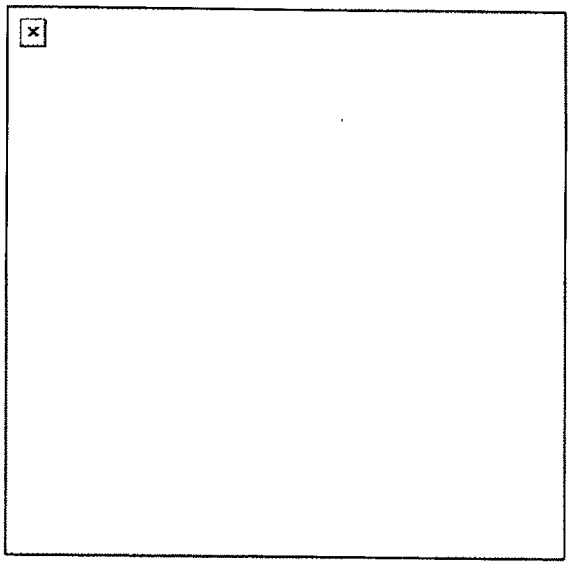
SENATOR SOTO: Okay, thank you. Most here so we're gonna so ahead and get started and this meeting is now called to order. The Senate Select Committee of the Perchlorate Contamination is being called to order today. I want to thank you all for—first of all, I want to thank the City of Fontana for allowing us to use beautiful facility and tell them we're very, very grateful for their trouble and everything we've put everything out of their way and taking it all up, so I really I am grateful for that. Thank you very much, City of Fontana.

I want to thank you all for coming today. It was nearly two years ago that I convened the Inland Empire Perchlorate Task Force and my goal was simple—investigate the sources of perchlorate contamination that are destroying local water supplies and keep regulatory agencies focused on solving the problem and identify the financial and technological resources we need to clean up the groundwater while protecting the ratepayers and the water users.



SENATOR SOTO: Okay, ___ hypothetically assuming they are right as to the size of their contamination plume, could you calculate the volume of groundwater attributable to what the county admits they have polluted?

MR. ROHR: Yes, recognizing that we and several others disagree with the actual assertion that the plume goes only 4,000 feet, using the figure that was shown earlier both by the county's consultant and ourselves, it's possible to calculate how much of the plume is admittedly attributable let's say to that theoretically 1999 release. The way that would be done is you would take the area, how much ground is that, how much surface area does that area represents, and I think it represents about 10 million feet, square feet. And that's about 230 acres. Given that kind of circle, assuming an area there you can take a look at how thick is the aquifer, how much water is there. and that's about 50 feet or so. That's assuming the entire aquifer's contaminated which we know it isn't, but to get a ballpark number. And then you multiply that by the porosity. Basically, it's, what is it? It's 230 acres times about 50 feet times a porosity of .25 which is the lowest number that was presented by the county. That comes out, you can come up with a number and that comes out to about 28 hundred acre feet. That would



be an estimate of some attributable contamination related to specifically to this release. Although we disagree and think it might be more.

SENATOR SOTO: Thank you. Are there any questions?

MR. ROHR: Thank you.

SENATOR SOTO: Thank you very much. Mr. Chris Sheehy. So you are the interim settlement agreement from—you're giving us the status of the interim settlement agreement with Goodrich Corporation.

MR. CHRIS SHEEHY: Largely yes, but I have some prepared comments just on the status of where we're at, yes. The interim agreement and some other issues. Okay?

Good morning, Madam Chair and members of the committee. My name is Chris Sheehy and I'm the director of Environmental Health and Safety Services for Goodrich Corporation. Thank you for inviting me to testify this morning.

SENATOR SOTO: I'd like to say something with regard to your presentation, Mr. Sheehy. I thank you for your testimony and I would like to publicly go on record for the people of California and my district stating the gratitude for your company doing the right thing. And sometimes it's difficult for corporations to understand the value of working in a collaborative style with the public for a greater good, which

State toxic control agency fines Rialto firm $2.5 million

Wednesday, February 26, 2003
AP Breaking News

(02-26) 21:13 PST LOS ANGELES (AP) --

Nearly $2.5 million in fines have been levied against a Rialto hazardous waste facility where thousands of pounds of unstable explosives were stored, the state Department of Toxic Substance Control announced Wednesday.

The fines were part of a settlement in which Denova Environmental Inc. must pay $2.48 million and its acting president, Robert V. Cole, is co-liable for $600,000 of that amount.

"When in operation, the facility had a continuing pattern of violations," said Ed Lowry, director of the state Department of Toxic Substance Control. "Although (the state) has already revoked the facility's authorization to operate and has taken steps to ensure the removal of dangerous hazardous and explosive waste from the site, the seriousness of the violations still warrants a substantial penalty to deter such conduct in the future."

Terms of the settlement, which was reached Monday, call for Cole to pay $250,000 within 30 days. If he fails to make the payment, he must pay the full $600,000 amount.

If the first payment is made, the agency will conduct an audit to determine if Cole is able to pay the remaining $350,000.

A telephone call made to Cole's attorney, Charles Whisonant, after business hours Tuesday was not immediately returned.

In May 2000 the Denova facility in Rialto, about 50 miles east of downtown Los Angeles, received state authorization to store and manage hazardous waste. Before that the facility was owned by Broco Inc. and Broco Environmental Inc.

State investigations in 2001 and 2002 found that Denova was storing more than twice the authorized amount of hazardous waste, mixing incompatible hazardous waste and unsafely managing explosive hazardous waste.

The state agency terminated the facility's authorization and ordered the removal of all hazardous waste, including explosives.

Officials said Denova failed to remove the waste, prompting the state to turn the site over to the U.S. Environmental Protection Agency for emergency cleanup.

Over several months last year the EPA detonated thousands of pounds of unstable explosives and shipped some material to a disposal site in Louisiana. In some instances, U.S. Marines were used to remove explosives.

Two EPA contract employees were burned in October 2002 when a catapult device exploded while being loaded into a blast chamber. One worker was treated for second-degree burns over 40 percent of his body and the other had second-degree burns on his arms.

The settlement resolves violations of hazardous waste management laws outlined in two state Department of Substances Control orders issued in September 2001 and July 2002.

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD

SANTA ANA REGION

TRANSCRIPT OF ITEM NO. 11

OF THE REGIONAL BOARD MEETING

Friday, January 17, 2003

CITY COUNCIL CHAMBERS
25541 Barton Road
Loma Linda, California

BOARD MEMBERS PRESENT:

CAROLE BESWICK (Chair)

FRED AMERI (Vice-Chair)

JOSE SOLORIO

SEYMOUR VAN GUNDY

JOHN WITHERS

KAREN STEIN

JOAN DOTSON

WILLIAM RUH

CHAIRPERSON BESWICK: Any questions for Bob? Yes, Fred.

VICE-CHAIRPERSON AMERI: Bob, this may be a little bit of a technical question, but I'm a little confused on the F-6 well that the level of perchlorate in '97 was something like four point something, and suddenly in 2001 it went to 250 parts per million, and if you are relating this contamination to the 1940s, you are talking about 50 years later. Is there any indication of what the rate of travel of this perchlorate is and if it's -- has it taken 50 years to get there and suddenly in 2001 we are getting -- I'm a little confused on that, why this total discrepancy between the two numbers within a four-year period.

MR. HOLUB: Well, nobody knows for sure but we feel very strongly that it may be related to the sand and gravel operation. That sand and gravel operation just started up a few years ago, and in conjunction with that sand and gravel operation, they handle a lot of water, they do a lot of soil washing, they have ponds, they have water sitting in them all the time, so we are presuming that all this water that's now sitting on top of that area and percolating through the soil and is flushing it

through.

VICE-CHAIRPERSON AMERI: So, in other words, it was sitting there for all these years and the sand and gravel operation exacerbated that condition?

MR. HOLUB: We believe that to be the case.

VICE-CHAIRPERSON AMERI: We believe that to be the case. Okay. Got it.

MR. THIBEAULT: And that's also why we are asking for the additional characterization to really pin that down. You'll note that Bob didn't spend any time talking about wells in Rialto and Colton because we think this is a more recent release. The data seem to -- the data that Bob talked about and what we'll hear from the County's consultant this morning, I'm sure, seemed to focus on a more recent release maybe related to the sand and gravel operation now just showing up in an area where the -- whereas, the other contamination in Rialto, Colton and south of the Kwikset/Goodrich property took place a long time ago, and there probably isn't the same driving head there as there is on the County property.

VICE-CHAIRPERSON AMERI: Maybe we should

this thing done.

So with that that, thank you for your time.

CHAIRPERSON BESWICK: Well, I'm going to thank you, first of all. That was really an exceptionally good representation. I think it really summarized very, very succinctly but also clearly what you are facing and what the impacts are all the way around, so I thank you for that. It was really well done.

Are there questions or -- yes?

VICE-CHAIRPERSON AMERI: Just a comment and a question -- more a clarification.

I would also like to commend you for your presentation. I think it was very, very comprehensive, and the County has done a great job presenting the material to us, and I'm glad you took the EO's recommendation of doing those two wells on the southwest side to relieve yourself from any unknowns in the future.

MR. LASS: We have Jerry to thank for that, so --

VICE-CHAIRPERSON AMERI: Yeah. Great. Great.

My question, or the clarification I would

like to hear is, are you in concurrence with the staff that basically the perchlorate existed in the ground in the land beneath dormant and the activities of the County with regard to the landfill basically -- I wouldn't say aggravate -- but activated the migration of the perchlorate into the groundwater and ultimately into the wells? Is that pretty much the understanding?

MR. LASS: With one correction. It's not the activities of the landfill.

CHAIRPERSON BESWICK: Right.

MR. LASS: The correction would be that it's certainly suggestive that the aggregate processing operations mobilized constituents that perhaps were existing dormant in the vadose zone prior to its use for water disposal.

VICE-CHAIRPERSON AMERI: How does that differ from the staff's understanding?

CHAIRPERSON BESWICK: I don't think it does.

VICE-CHAIRPERSON AMERI: Do you have pretty much concurrence in that respect?

MR. LASS: Yes.

VICE-CHAIRPERSON AMERI: Okay. Thank you.

Select Committee on Percholorate Contamination

February 27, 2004

Fontana City Hall
Fontana, California

SENATOR NELL SOTO: We're waiting for Senator Escutia is on her way. And we're gonna wait a few more minutes to see if she gets here. And when she does, hopefully she'll be here pretty soon. Have you heard any, how long it's gonna be before she gets here?

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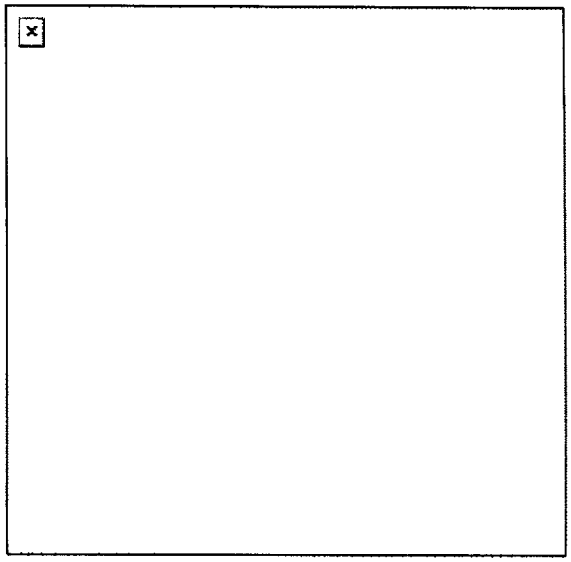
I want to thank you all for coming today. It was nearly two years ago that I convened the Inland Empire Perchlorate Task Force and my goal was simple—investigate the sources of perchlorate contamination that are destroying local water supplies and keep regulatory agencies focused on solving the problem and identify the financial and technological resources we need to clean up the groundwater while protecting the ratepayers and the water users.

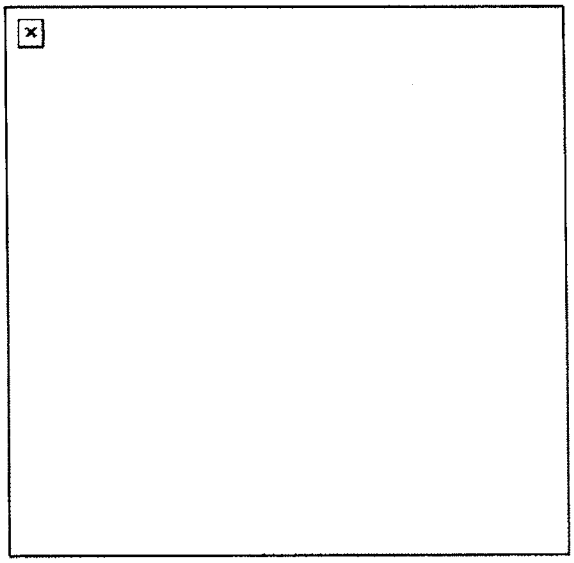


MR. LASS: Yes.

SENATOR ESCUTIA: Okay. And so you're, were you gonna give us the results of those tests for each of those 40 wells?

MR. LASS: Yes. That's what I have here. One of the things that we've done here is we've plotted the maximum concentration of perchlorate identified in the various wells that the county has drilled for this perchlorate investigation. And what you see is up right in the immediate vicinity of that little orange dot is where we have the highest concentrations. We got as high as 1,000 micrograms per liter in one sample from that area. It declines down to Well N9 which is here. It's down to about 90 and it's a fairly nice, regular decay or decline in the perchlorate concentrations in groundwater monitoring wells.

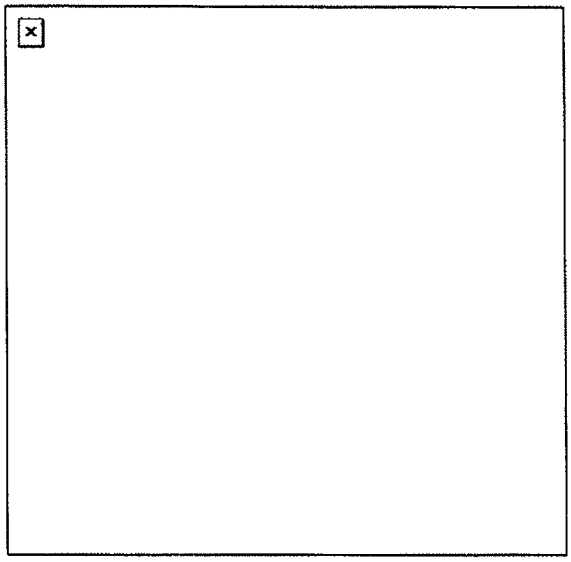
The second thing that's very significant in terms of contaminant migration, and again this is why the county's position is you have to characterize before you remediate, is that within the area down gradient of the RBS and the Astro Pyrotechnics property, the groundwater system is ____ actually compartmentalized. The USGS in a study in 2001 identified I think two groundwater units. The county has further characterized the groundwater system in what the USGS characterized as the intermediate groundwater zone. There are at least three distinct



groundwater systems in it. The reason that that is significant is that the contaminants from the site are clearly isolated to the first two water zones. It allows the county now the opportunity to contain a smaller volume of water higher concentrations and be more effective is spending the corrective action dollar. So we think it's very, very important to do characterization.

In that regard, we feel that there has been a fairly accurate delineation, certainly of the 1999 release, what we would characterize as the wash pond mobilize perchlorate _____ from the site or some other site such as Astro Pyrotechnics, but it appears to be temporarily related to the pond use so that's probably a mobilizing event.

Go to the next slide, Art. What you see on this slide is we were also then with the hydrostratographic information that we had available to us we were able to conduct a groundwater model. Groundwater model ____ shows a very distinct and dramatic southface ____ flow gradient for impacts that would emanate from the former bunker area adjacent to the land fill and it suggests based on the hydraulic testing that we did that those impacts from the 1999 release would have extended down to about N9 so it's consistent with the monitoring data that we identified.



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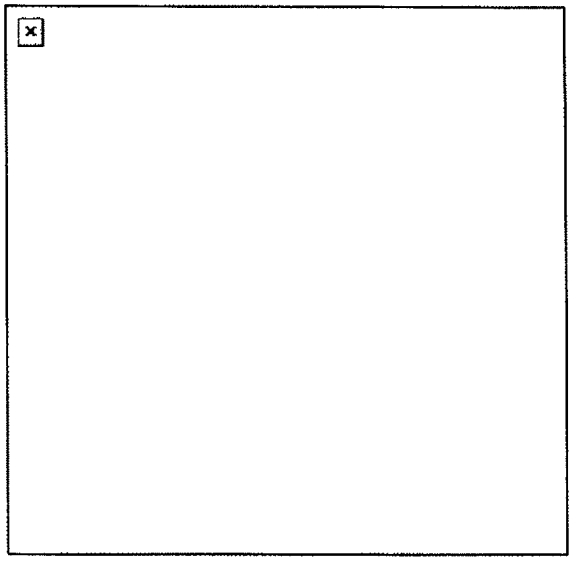
It's also if you go to the next slide, entirely consistent with the flow path identified by the USGS in this area of the Rialto-Colton Basin and in fact when you look at velocities and gradients it's not inconsistent with the USGS philosophy, calculated velocities either.

Next slide. This is an overlap of the modeled release from a 1999 plume overlaying the black contours which are a simple manual calculation of total perchlorate mass load per unit area in the soil. The fact that they're reasonably coincident gives us some confidence that we have reasonable hydraulic parameters that we're dealing with. Clearly the county went in as the last scope of the investigation, put in Well N10. Well N10 I will point to down here. Very important well in this characterization. N10 what you'll see out of the chemistry of N10 is a significantly increased perchlorate concentration as well as the difference in the distribution of perchlorate. N10 is the first well that we've seen in the investigations from the '99 release where the impacts are significantly within the deeper water system. So it's dramatically different from the nature of the original characterized plume, this blue where the black circle in it also appears to be different in terms of concentration.

SENATOR ESCUTIA: But, that well, N10, you pointed it. It's outside of that boundary? It's outside of the original plan?

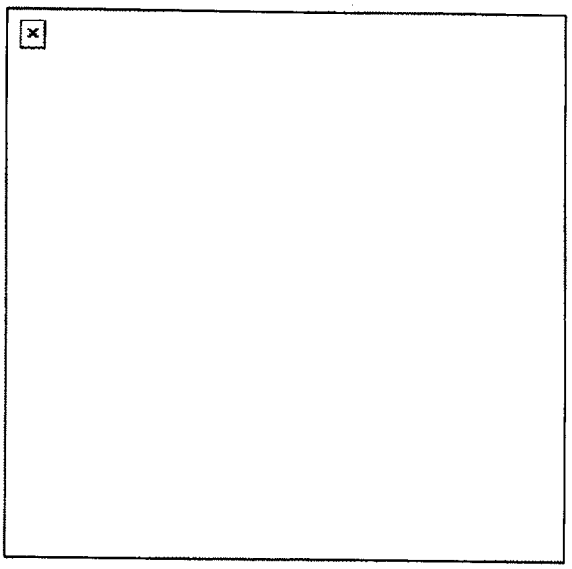


MR. LASS: It's outside of what we characterize as the 1999 wash pond driven impacts.

SENATOR ESCUTIA: So, why did you start drilling there if it was outside the—

MR. LASS: Well actually, that well was drilled with the purpose of being a sentry well. It was anticipated it would be outside the zero line. It puts us with a monitoring well between this release and Rialto Well Three which is down gradient and not impacted so the county's intention with N10 was to identify a sentry point with which they could then identify early whether impacts were migrating towards a production well and deal with those impacts before they reached that well. So actually, it was quite surprising to everybody to find what we found in N10. It's inconsistent with this release. The county's interpretation today is that it's more consistent with the larger regional release, but certainly we recognize there's uncertainty. The county's proposal in moving forward is to do additional characterization in that area to clarify—

SENATOR ESCUTIA: Wait, wait, wait. You say a lot of stuff there. You said a lot of stuff right there. You said that you were very surprised that the findings of Well N10 and that those findings were that the perchlorate is very, very high, right?



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MR. LASS: Well, it's higher than it was in N9 and it's inconsistent with the declining trend that we've identified ____.

SENATOR ESCUTIA: But, you're also saying that it's more consistent with the findings of this being a regional release in a larger plume than the main plume?

MR. LASS: The county is not in a position now and as the next slide will show one of the things that they propose to do over the next several months is to further characterize the hydrogeology in the area of N10, between N10 and Rialto Well Three in order to define whether it could be a two-stage release from the RBS property or whether it's the regional release that affects the deeper water system. So the county recognizes there's uncertainty there. It is proposing in their current work plan that's been submitted to the board to do down gradient characterization of that area.

That's where we go to the next slide, Art. There's one thing though that the county does believe that we can safely say at this point in terms of conclusions. The first one is there is uncertainty. N10 certainly opened uncertainties in the characterization and the county recognizes that, proposes to do substantial additional investigations to clarify that issue.